

GOVDOC

BRA

5138

BOSTON PUBLIC LIBRARY

3 9999 06543 445 6

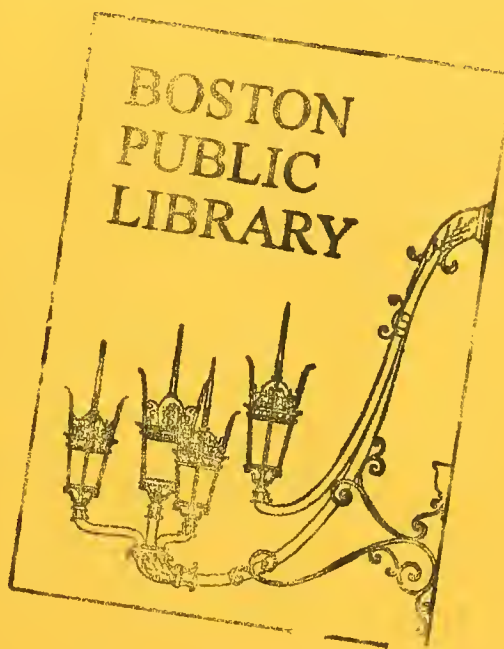
Property Of

BOSTON REDEVELOPMENT AUTHORITY

Library

THE NEW ENGLAND ECONOMY AND THE BOSTON AND MAINE RAILROAD SYSTEM

A Preliminary Report of the Boston and Maine Study Group



26 October 1973

T20
B

THE NEW ENGLAND ECONOMY AND THE BOSTON AND MAINE RAILROAD SYSTEM

A Preliminary Report of the Boston and Maine Study Group

Property Of
BOSTON REDEVELOPMENT AUTHORITY
Library

26 October 1973

5 November 1973

Alan A. Altshuler, Secretary
Executive Office of Transportation
& Construction
Commonwealth of Massachusetts
18 Tremont Street
Boston, Massachusetts 02108

Edward J. King, Executive Director
Massachusetts Port Authority
470 Atlantic Avenue
Boston, Massachusetts 02210

Forest I. Neal, Jr., Presiding Officer
Massachusetts Bay Transportation
Authority
500 Arborway
Jamaica Plain, Massachusetts 02130

Russell F. Merriman, Federal
Co-Chairman
New England Regional Commission
53 State Street, Suite 400
Boston, Massachusetts 02109

Bruce Campbell, Commissioner
Massachusetts Department of
Public Works
100 Nashua Street, Room 410
Boston, Massachusetts 02114

Gentlemen:

The Boston and Maine Railroad Study Group is pleased to submit to you its first formal report on its principal findings and conclusions concerning the economic viability of the B&M transportation system, its impacts upon the New England economy, and some of the possible avenues of action to assure the continued availability of essential rail services in the areas served by the railroad.

5 November 1973

It is, however, a preliminary report. Additional specific work remains to be done and, in fact, is presently underway dealing with the Penn Central Boston & Albany line versus the B&M Hoosac Tunnel east-west routes, yard and other operating costs of the railroad, and additional system configuration simulations. Also work has been undertaken and completed regarding alternate uses of the abandoned B&M rights-of-way. This was the subject of a separate report to the Massachusetts Department of Public Works.

More significantly, this report offers to all who share concern over the future of the Boston and Maine system, indeed the entire northeastern United States rail system, an intentionally provocative opportunity for considering the varied, complex, and sensitive policy issues implicit in this reporting of the study effort. From the discussions that will take place, valid questions will be raised and additional data will be made available which the Study Group will use both to refine this report as well as to provide the basis for future efforts dealing specifically with the B&M.

It is also essential that the New England states move beyond this immediate, though appropriate, preoccupation with the Boston & Maine Railroad to a broader consideration of the future of rail service as a whole in the region. None of the region's railroads is truly sound financially. The increasingly unsteady condition of these lines, coupled with their vital importance to the New England economy, underscores the need for concerted action now, before New England is faced with yet another rail crisis. The B&M study effort, its body of accumulated knowledge, and particularly the methodology employed in the effort, offer wide-ranging opportunities to public policymakers for the continued testing of alternative courses of action and their probable effects in responding to the serious problems of other regional and regionally supportive rail systems.

Neither the complexity nor the magnitude of the problems confronting the individual New England states or the region as a whole can be minimized by this study effort. On the other hand, the Study Group believes that a useful



Digitized by the Internet Archive
in 2012 with funding from
Boston Public Library

Mssrs, Altshuler, Neal, Campbell,
King, Merriman

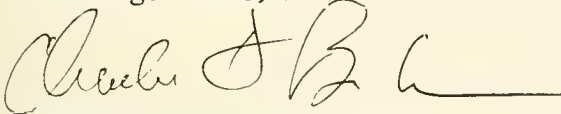
3

5 November 1973

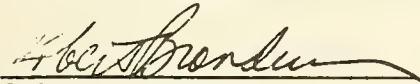
tool has been developed and is being made available to those responsible for transportation policy planning and execution. With appropriate care and understanding, it can contribute significantly to the making of decisions that will permit the use of New England's rail resources to their proper advantage, and ultimately to the realization of a truly balanced regional transportation system.

Sincerely,

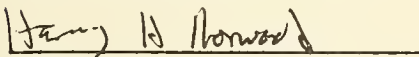
Harbridge House, Inc.



Charles D. Baker

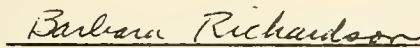


Robert Brandwein



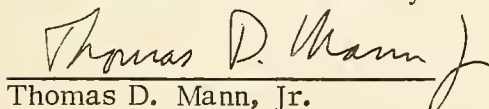
Henry H. Norwood

Massachusetts Department of
Public Works



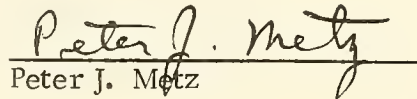
Barbara Richardson

Massachusetts Port Authority



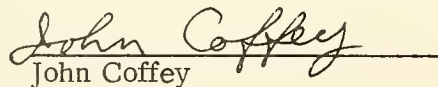
Thomas D. Mann, Jr.

Executive Office of Transportation
& Construction, Commonwealth of
Massachusetts

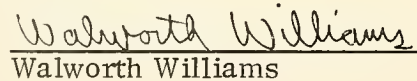


Peter J. Metz

Massachusetts Bay Transportation
Authority

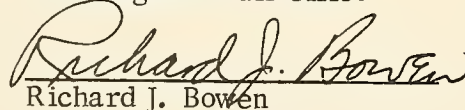


John Coffey

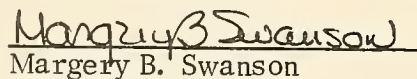


Walworth Williams

New England Rail Office



Richard J. Bowen



Margery B. Swanson

This report, funded by the Massachusetts Department of Public Works, the Massachusetts Port Authority, and the New England Regional Commission, holds no copyright and can be reproduced without permission.

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY OF MAJOR FINDINGS AND CONCLUSIONS.....	1
I. INTRODUCTION.....	3
A. The Plight of the B&M Railroad.....	3
B. Establishment of the B&M Study Group.....	3
C. Study Approach.....	4
1. Definition of B&M Segments.....	6
2. Freight Flow, Revenue, and Cost Data Base.....	6
3. Development of the Profitability Model.....	8
II. ECONOMIC IMPACT OF THE B&M.....	13
A. Study Objective and Approach.....	13
B. Study Findings.....	15
1. Number of Jobs and Value Added Dependent on B&M Services.....	15
2. Impact of B&M Service on Wholesale and Retail Prices.....	17
a. Household Consumption Items and Construction Materials.....	22
b. Farming and Dairying Inputs.....	23
c. Fuel Items.....	23
d. Miscellaneous (Rock Salt).....	24
C. Conclusion.....	24
III. THE ECONOMIC VIABILITY OF THE B&M.....	27
A. Introduction.....	27
B. The Prospects for Successful Reorganization.....	27

	<u>Page</u>
1. Background and Study Findings.....	27
a. Projected Increases in Freight Tonnage.....	28
b. Sales Blitz and Other New Accounts.....	31
c. Freight Rate Increases.....	31
d. Freight Subsidies.....	32
e. Cost Savings from Abandonment.....	32
f. Level of Maintenance Expenditures.....	33
g. Cost Savings from Capital Improvement and Increased Productivity.....	34
h. Cost Savings from Personnel Reductions.....	34
i. Taxes and Rents.....	35
2. Study Group Conclusions.....	36
C. The Merger Potential.....	37
1. Background and Study Findings.....	37
2. Conclusions.....	40
D. The Process of Segmentation.....	43
1. Background and Findings.....	43
2. Conclusion.....	50
IV. PRODUCING A SOLUTION.....	53
A. Introduction.....	53
B. The Context of the Northeast Rail Problem.....	53
C. Implementation Measures.....	55
1. Private Purchase.....	55
2. Purchase Through Debt Transfer.....	56
3. Creation of a Leasing Company.....	57
4. Government Assistance to Private Purchase.....	57
5. Government Purchase and Subsequent Lease.....	58

	<u>Page</u>
6. The Quasi-Public Corporation.....	60
7. Other Forms of Government Assistance and Involvement.....	61
a. The Massachusetts Bay Transportation Authority.....	61
b. The Massachusetts Department of Public Works.....	62
c. Government Support of Labor Termination Costs.....	62
d. Government Aid for Modernization.....	63
e. Tax Relief.....	63
D. Where Do We Go From Here?.....	63

LIST OF EXHIBITS

Exhibit I	Research Plan for B&M System Study.....	5
Exhibit II	Major Segments of B&M System.....	7
Exhibit III	Total Freight Volumes in Baseline Year.....	9
Exhibit IV	B&M Profitability Cost Categories.....	11
Exhibit V	B&M-Dependent Jobs in Major Segments.....	18
Exhibit VI	B&M-Dependent Manufacturing Jobs in Major Segments.....	19
Exhibit VII	Jobs Dependent on Continued B&M Service.....	20
Exhibit VIII	Alternate Projections of B&M Freight Tonnage, Revenues, and Expenses.....	29
Exhibit IX	Projections of Revenue Increases and Cost Reductions for Various Merger Combinations.....	41
Exhibit X	Proposed Segmentation Plans.....	49

APPENDIX

Appendix A	B&M System Overview.....	A-1
------------	--------------------------	-----

SUMMARY OF MAJOR FINDINGS AND CONCLUSIONS

- The financial plight of the B&M is critical.
- The continued operation of B&M rail lines is essential to the well-being of the New England economy.
 - At least 51,250 jobs in the five states served by the B&M and some \$811 million of value added, including \$445.3 million of wages and salaries, are directly dependent on the continued service over B&M lines.
 - Loss of B&M service would result in a 1 to 5 percent increase in the prices paid for major consumer commodities.
- The Plan of Reorganization proposed by the B&M Trustees on December 20, 1971, is not likely to result in a viable railroad.
- Large-scale or widespread rail line abandonments offer no prospect for restoring the B&M to an economically viable status.
- Various proposals for merging the B&M with other New England railroads appear to have little prospect of succeeding.
- Segmentation of the B&M with acquisition of the various segments by connecting railroads appears to offer the only realistic hope for continuing service on essential B&M lines, short of extensive government subsidy or involvement.

- Purchase of various B&M lines around Boston by the MBTA, while it may be essential to assure continued commuter service, is not likely to significantly improve the financial condition of the B&M. Purchase of the B&M freight lines by the Massachusetts Port Authority is seen as inappropriate in light of more suitable and more feasible private enterprise and federal actions.
- Many of the actions currently being considered by Congress for federal legislation could be of considerable assistance in restoring the freight services of the B&M to a sound economic footing. It is especially important that the process for implementing such federal restructuring consider the potential economic impact of any actions. Furthermore, meaningful state and regional participation must be included in the process.

I. INTRODUCTION

A. The Plight of the B&M Railroad

The recent history of the Boston and Maine (B&M) Railroad parallels that of other railroads in the Northeast. Beginning in 1958, the B&M suffered uninterrupted deficits which culminated in bankruptcy in the spring of 1970. To cover these deficits, management cut back on maintenance and capital expenditures; as a consequence the physical condition of the railroad deteriorated rapidly, resulting in further losses of customers and revenues and thereby further accelerating the financial decline of the railroad.

Following the bankruptcy, the court-appointed Trustees took a number of important steps designed to slow the financial and physical erosion of the railroad and hopefully to turn the situation around. Initially, their efforts appeared to bear fruit as the deficit fell from \$14.3 million in 1970 to \$6.4 million in 1971. The respite proved short-lived, however, as the 1972 deficit climbed back to \$11.7 million, and the deficit in the first half of 1973 was 137 percent higher than that for the comparable period in 1972. Perhaps more important, B&M's cash flow situation, which had been favorable during 1971 and 1972 despite the deficits, began to weaken by the end of 1972 due to the additional cash outlays required to meet increasing maintenance needs. Appendix A contains a summary of B&M financial statements.

B. Establishment of the B&M Study Group

During 1971 and early 1972, a number of state and local officials had become increasingly concerned over the continued deterioration of the B&M and were of the opinion that a thorough analysis should be made of the B&M situation to determine what action could and should be taken to assure the continuation of essential B&M service. Accordingly, in September 1972, at the request of the Governor of Massachusetts, Francis W. Sargent, the Massachusetts Port Authority,

the New England Rail Office,¹ the Massachusetts Executive Office of Transportation and Construction, the Massachusetts Department of Public Works, and the Massachusetts Bay Transportation Authority established the B&M Study Group, consisting of representatives of the participating agencies plus transportation management consultants from Harbridge House, Inc., of Boston. The objectives of the Study Group were threefold:

- To evaluate the current and probable future economic viability of the Boston and Maine railroad system.
- To assess the economic impact on communities, shippers, and the New England economy of possible changes in the level of B&M service.
- To evaluate alternative measures which could be taken by various public and/or private groups to assure the continued availability of essential rail services in the areas served by the B&M.

C. Study Approach

The overall research plan adopted and carried out by the Study Group is presented in flow chart form in Exhibit I. Because of the magnitude and complexity of the undertaking, and more particularly because of the complex relationships that exist between various parts of a railroad such as the B&M, the Study Group decided to center its analysis around the development of a series of computerized simulation models which would allow them to determine specifically what impact various changes in the B&M structure would have both on the economic viability of the B&M and on the New England economy.

¹The New England Rail Office was then an agency of the New England Governors' Conference and is now a division of the New England Regional Commission.

Development of the models involved three steps: (i) division of B&M lines into logical segments; (ii) development of a freight flow data base; and (iii) construction of profitability and economic impact models. These are discussed below.

1. Definition of B&M Segments

The purpose of this initial step was to divide the various main and branch lines which made up the B&M system into manageable segments which could then be separately analyzed in terms of both their profitability and their economic impact. Toward this end, the 1,482 road miles in the B&M system (as of 30 September 1972) were divided into 31 major segments and those were further subdivided into 161 minor segments. The major segments are shown in Exhibit II.

2. Freight Flow, Revenue, and Cost Data Base

For each B&M segment thus identified in step 1, the Study Group developed basic data on number of car loads, weight, and revenue which could be aggregated, isolated, or sorted by any one or a combination of the following identifiers:

- Commodity
- Origin and destination road
- Origin and destination station
- Entry gateway (Point of entry onto the B&M system)
- Exit gateway (Point at which car left the B&M system)
- Piggyback plan (Type of piggyback billing)
- Type of traffic (Forwarded, received, local, bridge)
- Month
- B&M segment identification
- Origin region (Broad geographic region; for example, Southwest U.S.)

EXHIBIT II MAJOR SEGMENTS OF B&M SYSTEM

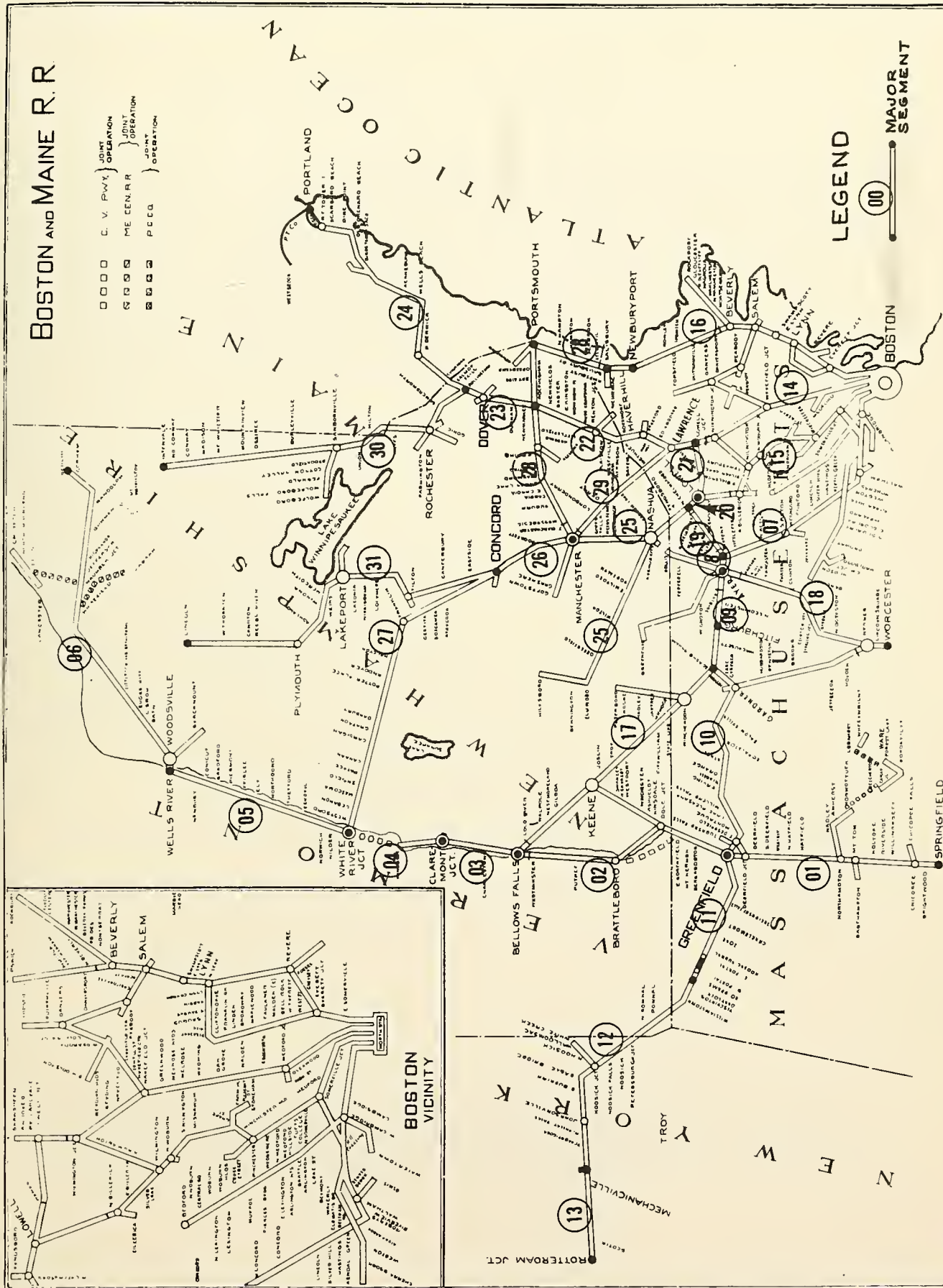
BOSTON AND MAINE R.R.

0000 C. V. PWY. } JOINT OPERATION
 0000 ME CEN R.R. } JOINT OPERATION
 0000 P.C.C. } JOINT OPERATION

LEGEND



MAJOR
SEGMENT



--Destination region

--B&M routing

The above data were drawn from B&M files¹ and represented the actual freight volumes experienced by the B&M in the 12-month period, 1 October 1971 through 30 September 1972 (hereafter referred to as the baseline year). The Study Group is greatly indebted to the Boston & Maine for their cooperation and assistance in supplying and interpreting these tapes. A summary of total freight revenues for the baseline year are graphically depicted in Exhibit III.

Concurrently with the freight flow and revenue analysis, the Study Group undertook a study of the costs incurred directly and indirectly by the B&M in operating the 31 major segments. Where these costs were directly identified with the operation of a particular segment (for example, train crew and yard costs, property taxes, or maintenance of way), they were directly assigned to that segment. Costs which could not be directly traced to a particular segment (for example, general overhead and interest expense) were prorated among segments in relation to directly allocated costs.

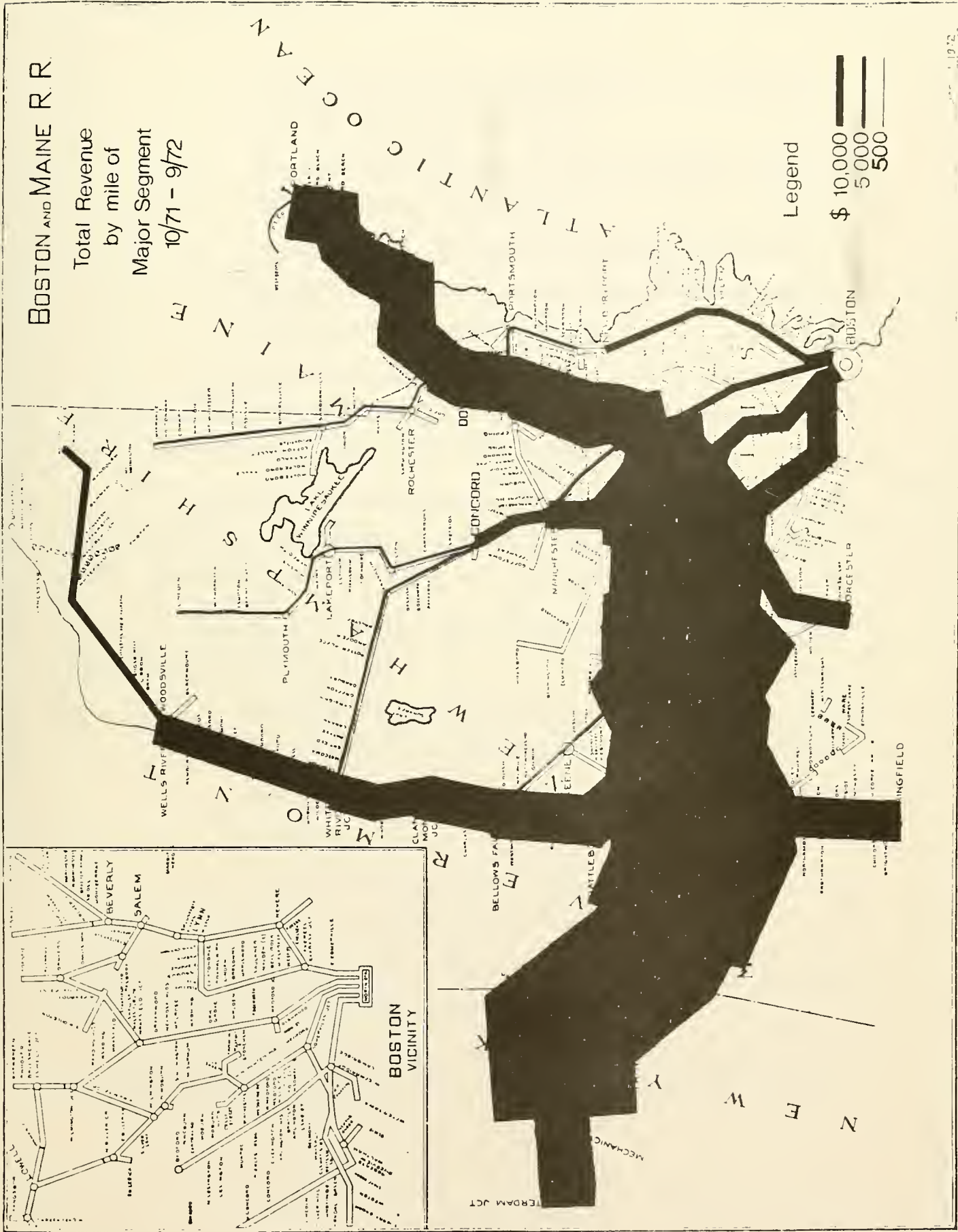
3. Development of the Profitability Model

The profitability model combines the freight flow data base, revenues, and costs into a profit/loss statement by major segment. Therefore, the individual profitability/loss of each segment could be identified as well as the profitability/loss of different configurations of the B&M system. The model is based on three categories of data:

¹Quarterly Commodity Statistics (QCS) tapes filed with the I.C.C. by the railroads; Association of American Railroads (AAR) Standard Point Location Code (SPLC) tapes; and some AAR Standard Transportation Commodity Code (STCC) tapes.

EXHIBIT III

TOTAL FREIGHT VOLUMES IN BASELINE YEAR



- Freight routing data in the form of decision rules applied to the freight flow data base.
- Cost estimating relationships, based on geography, car movements, car miles, or train miles.
- A revenue and cost allocating relationship which spread the revenue and most of the costs over each freight-carrying trip in the year on a trip-mile basis.

The freight routing data, developed from interviews with the B&M operating department, was reduced to a decision table giving the preferred route for shipment from all B&M origins to all B&M destinations.

The cost estimating relationships were established for 21 categories with each category related to the most appropriate measure of volume (if applicable). The categories and cost bases are shown in Exhibit IV.

The development of appropriate revenue and cost allocating relationships involved the following steps:

- Identification of those cost categories which could be associated with actions necessary to make individual freight movements.
- Association of the revenue and appropriate costs with each freight trip.
- Allocation of the revenue and appropriate cost, on a per mile basis, to all segments used in each freight trip.

All of the first 12 cost categories, except maintenance of way, leased line rent, and real estate and property taxes, were allocated in this manner.

A computer program model was developed to carry out the arithmetic necessary to compute the revenue, costs, contribution to fixed costs, and profit

EXHIBIT IV
B&M PROFITABILITY COST CATEGORIES

<u>Category</u>	<u>Basis of Allocation</u>
Engine and Train Crew	Level of service, based on 1971-72 train miles
Locomotive Servicing	Train miles
Fuel	Ton miles
Supplies	Car miles
Yards ¹	Cars using yard, fixed cost by yard
Stations ²	Cars originating or terminating at station, fixed cost by station
Locomotive Repair	Ton miles
Maintenance of Way ¹	Fixed by segment, based on study
Leased Line Rent ¹	Fixed by segment
Joint Facility Rent ¹	Cars using facility, fixed cost by facility
Real Estate and Property Tax ¹	Fixed by segment
Car Hire and Lease	Car miles
Superintendence and Dispatching ²	Fixed at 1971-72 level
Other Operating Expenses ²	Fixed at 1971-72 operating department costs less appropriate items above
Car Repair ²	Fixed at 1971-72 level
Other Equipment Maintenance Expense ²	Fixed at 1971-72 maintenance department costs less appropriate items above
Other Maintenance of Way Expenses ²	Fixed at 1971-72 maintenance-of-way department costs less appropriate items above
Payroll Taxes ²	Variable with labor intensive items
Locomotive and Equipment Rental ²	Fixed at 1971-72 level
General Overhead ²	Fixed at 1971-72 level
Interest and Extraordinary Items ²	Fixed at 1971-72 level

¹These categories were made variable with simulated changes in the B&M system configuration.

²These categories were made variable with simulated changes in the B&M organization structure.

for each segment of the system. This program was run for a number of different configurations of the B&M system and analyzed for a number of organization plans.

Development of the economic impact model is discussed in the next section.

II. ECONOMIC IMPACT OF THE B&M

A. Study Objective and Approach

As noted earlier, a major objective of the study was to identify and describe the impact that the B&M has on the New England economy and more particularly to determine what the impact would be in terms of jobs lost, if B&M service were partially or wholly discontinued. For example, the Study Group knew from several sources¹ that a number of firms in New England would be obliged either to cut back their operations or quite possibly close their firms entirely in the event that rail service were no longer available to them. However, specific data regarding the extent of such cutbacks and closedowns were not available for New England or, indeed, for any other region. In the Study Group's view, such information was absolutely essential in order to provide a rational basis for formulating public policy and more specifically for determining what posture various governmental agencies should take towards the B&M.

In view of the magnitude, complexity, and uncertainties involved in attempting to identify the number of jobs directly and indirectly dependent upon B&M service, the Study Group decided to undertake two parallel types of research, the first directed at computing B&M-dependent jobs through the statistical analysis of B&M freight flow data described earlier, and the second based on a series of surveys and interviews of B&M shippers. Such a two-pronged approach was essential, the Study Group felt, in view of the unique nature of the research effort and in order to provide a cross-check on the data collected.

The methodology developed by the Study Group for converting freight flow data into jobs involved the following steps:

¹Specifically, these sources were the prior testimony before the Interstate Commerce Commission and the B&M bankruptcy court, as well as prior experience with various railroad abandonments.

- Based on the freight model, total tonnages of originating and terminating freight, broken down by four-digit SIC code and B&M segment, were determined for the baseline year (1 October 1971 - 30 September 1972).
- National and regional economic statistics were used to convert total freight tonnages for each commodity and segment successively into: (i) total commodity value, (ii) total value added, and (iii) total number of primary manufacturing jobs.
- In considering the case of a cessation of B&M freight service, the total number of jobs thus derived was adjusted downward to remove those jobs which would not be lost due to the availability of another railroad in the area and/or competitive truck, barge, or air rates. This then involved both industry interviews and a series of intermodal rate analyses.
- The resultant number of manufacturing jobs directly related to continuance of B&M service were then multiplied by a factor of 2.5 to reflect both the direct and the secondary impacts of lack of B&M service. The 2.5 multiplier was based on a recently completed multiregional input-output analysis for the United States.¹
- Finally, since a loss of B&M service could be expected to produce higher prices rather than reduced output in the case of wholesale/retail commodities such as food, fuel, and construction material, a determination was made of the likely increase in price levels that would result from loss of B&M service.

¹Karen R. Polenske, Harvard Economic Research Project, "Multiregional Input-Output (MRIO) Model," 1972.

The survey and interview phase of the economic impact analysis involved a survey by mail of a large number of B&M shippers as well as a series of in-depth interviews with a more limited number of such shippers. The so-called short-form survey questionnaire was sent to some 2,753 firms served by the B&M in Maine, Massachusetts, New Hampshire, New York, and Vermont. A total of 940 (34 percent) of the questionnaires were returned, and 38 percent of these had sufficient information for analysis.

The so-called long-form questionnaire, involving in-depth personal interviews with key company officials, were completed for 64 major B&M shippers. Major assistance in the conduct of these interviews was provided to the Study Group by the following organizations:

- Associated Industries of Maine
- Associated Industries of Massachusetts
- Business and Industry Association of New Hampshire
- Maine Department of Commerce and Industry
- Maine Department of Transportation
- Massachusetts Department of Commerce and Development
- New York Department of Transportation
- Vermont Department of Highways
- Vermont Public Service Board

B. Study Findings

1. Number of Jobs and Value Added Dependent on B&M Services

Based on the combined results of its various economic impact research efforts, the Study Group estimates that, at a minimum, some 51,250 jobs would be lost if service were terminated throughout the B&M system. The 51,250 jobs lost consist of the following:

	<u># Jobs Lost</u>
Manufacturing jobs within B&M shippers	17,000
B&M employees	3,500
Secondary jobs	<u>30,750</u>
Total	51,250

Viewed another way, some \$811 million of value added (of which \$445.3 million represents wages and salaries) would be lost to the New England economy if B&M customers were forced to curtail or shut down plants dependent on B&M rail service. It was not possible, of course, to physically inventory each and every job in the time available for the study, nor was it always possible for firms to anticipate what they would do if B&M service were discontinued at some time in the future. Accordingly, throughout the economic impact research, the Study Group followed the practice of collecting the lowest reasonable estimate of job loss or value added where alternate estimates or a range of estimates were possible. Thus, the estimate of 51,250 jobs dependent on B&M service is at the bottom end of a range that could go as high as 150,000 jobs, depending on how various firms reacted to a shutdown of B&M service.

On a state-by-state basis, the 51,250 jobs break down as follows for the states served by the B&M.

	<u>Jobs Lost</u>	<u>Value Added (000)</u>	<u>Total Non- Agric. Jobs 1972</u>	<u>% Total Jobs</u>
Maine	3,112	\$ 46,340	338,000	1.0
Massachusetts	35,842	568,964	2,290,000	1.6
New Hampshire	11,709	186,576	279,400	4.2
New York	305	4,807	N/A	
Vermont	<u>282</u>	<u>4,313</u>	155,400	0.2
TOTAL	51,250	\$811,000		

As noted earlier, separate estimates of jobs dependent on B&M service were developed for each of the 31 major segments and 163 minor segments into which the B&M system was divided for analytic purposes. Among the major segments, those found to have the largest number of jobs dependent on the B&M appear in Exhibit V, and a summary of total B&M-dependent manufacturing jobs is depicted in Exhibit VI. Exhibit VII shows the types of manufacturing in the five states served by B&M which have the largest number of jobs dependent on continued B&M service.

In addition to the above job loss figures (which represent only the number of jobs that would be lost in the immediate area served by the B&M), the Study Group noted that there are a number of manufacturing jobs in other New England areas not served directly by the B&M which would be affected, although probably not lost, if B&M service were discontinued. These latter are manufacturing jobs in those firms in middle and northern Maine, western Vermont, southern Massachusetts, and all of Connecticut and Rhode Island which use B&M rail service for the movement of commodities north or south through New England. Most of these firms can be assumed to have alternative routing available to them in the case that the B&M should shut down.

2. Impact of B&M Service on Wholesale and Retail Prices

In addition to moving goods originated in or destined to manufacturing plants in New England, the B&M also carries freight consigned to wholesale and retail outlets of household consumption goods, construction materials, inputs to farming and dairying operations, and fuel for power generation. Approximately one half of the B&M-carried tonnage terminating within the four northern New England states consists of commodities of this nature. Because of the importance of these commodities from the standpoint of the New England consumer, the Study Group conducted a special analysis of the potential impact of discontinuance of B&M service on 22 of such commodities. These 22 commodities, representing

EXHIBIT V
B&M-DEPENDENT JOBS IN MAJOR SEGMENTS

<u>Major Segment Number</u>	<u>Segment Description</u>	<u>Estimated Number of Jobs Dependent on the B&M</u>
1	Springfield-Greenfield Chicopee Falls Branch Easthampton Branch Wheelwright Branch	4,786
16	Boston-Newburyport Gloucester Branch Saugus Branch Salem and Danvers Branches	6,054
7	Boston-Willows (near Ayer) Berlin Branch Central Mass. Branch (Marlborough) Bemis Branch	4,333
25	North Chelmsford-Manchester Hillsboro Branch	4,114
18	Worcester-Ayer Gardner Branch	2,534

EXHIBIT VI
SUMMARY OF
B&M-DEPENDENT MANUFACTURING JOBS IN MAJOR SEGMENTS

<u>Segment Number</u>	<u>Number of Manufacturing Jobs</u>
1	4,786
2	604
3	30
4	171
5	49
6	2,039
7	4,333
8	0
9	1,272
10	1,734
11	917
12	140
13	182
14	1,695
15	1,376
16	6,054
17	257
18	2,534
19	334
20	1,130
21	495
22	2,607
23	487
24	2,583
25	4,114
26	1,099
27	80
28	418
29	245
30	583
31	69

EXHIBIT VII
JOBS DEPENDENT ON CONTINUED B&M SERVICE

VermontRank

- | | |
|---|---------------------------|
| 1 | Bakery products |
| 2 | Fabricated steel products |
| 3 | Printing |
| 4 | Paper |

New HampshireRank

- | | |
|---|-----------------------------------|
| 1 | Paper |
| 2 | Sanitary paper products; printing |
| 3 | Bakery products |
| 4 | Motor vehicle accessories |
| 5 | Plastics products |
| 6 | Paperboard boxes and containers |
| 7 | Cotton fabrics |

MaineRank

- | | |
|---|--|
| 1 | Fabricated steel products |
| 2 | Bakery products; miscellaneous food preparations |
| 3 | Paper, paperboard |
| 4 | Cotton fabrics |
| 5 | Plastics products |
| 6 | Leather tanning |

MassachusettsRank

- | | |
|---|--|
| 1 | Plastics; tires and inner tubes |
| 2 | Printing and publishing; sanitary paper products |
| 3 | Machinery; fabricated steel products |
| 4 | Bakery products |
| 5 | Paperboard boxes and containers |
| 6 | Cotton fabrics |
| 7 | Paper |

EXHIBIT VII (Cont'd)

New YorkRank

- | | |
|---|---------------------------------|
| 1 | Paperboard boxes and containers |
| 2 | Plastics products |
| 3 | Leather tanning |
| 4 | Paper |

over 80 percent of the aggregated B&M tonnage of wholesale/retail items, were grouped for analysis purposes into four broad categories--household consumption items and construction materials, farm inputs, fuel, and miscellaneous.

a. Household Consumption Items and Construction Materials. In the case of household consumption goods (primarily food items, in terms of the significance of the B&M's role) and construction inputs, the potential consequences of not having B&M service would largely fall on the final consumers in the form of higher prices. Increases in prices would depend on the transport cost differentials by alternative modes and the extent of the quantity carried by the B&M in the region's total consumption requirements, as well as on the fraction of the transportation cost component in the purchaser's price of the commodity. Major consumer and construction commodities which are currently transported via the B&M are as follows:

	<u>Percent of B&M tonnage in northern New England* to total consumption</u>	<u>Expected price rise for the region¹</u>
<u>Household consumption items</u>		
Meat	6.2%	0.6%
Fruits	6.8%	0.7%
Vegetables	5.9%	0.6%
Sugar	5.2%	0.5%
Butter	49.0%	4.9%
Cheese	50.0%	5.0%
Malt Liquor	12.9%	1.3%
<u>Construction materials</u>		
Lumber	21.0%	2.1%
Plywood	45.4%	4.5%
Hydraulic cement	19.9%	2.0%
Sand and gravel	1.0%	0.1%
Asphalt	5.0%	0.5%
Brick	7.2%	0.7%
Gypsum	4.8%	0.5%
Fabricated structural metal	31.7%	3.2%

*Maine, Massachusetts, New Hampshire, and Vermont.

¹ Assumes that transportation costs average 10 percent of purchaser's price and that discontinuance of B&M service would result in doubling of transportation cost.

b. Farming and Dairying Inputs. Three high-volume farm input commodities are currently transported by the B&M--grains (mainly shelled corn), fertilizers, and prepared feeds. As indicated in the figures¹ below, Maine receives the predominant portion of the B&M-carried grains, whereas Massachusetts receives the largest quantities of fertilizers and prepared feeds.

<u>Commodity</u>	<u>Massachusetts</u>	<u>Vermont</u>	<u>New Hampshire</u>	<u>Maine</u>
Grain	80,671	3,535	48,909	331,837
Fertilizers	32,835	7,135	6,864	16,914
Prepared feeds	154,471	21,251	93,946	96,005
Number of farms	5,703	6,874	2,902	7,971

The B&M-carried tonnages make up the following proportions in the total quantities consumed by the approximately 23,000 farms in the four northern New England states:

	<u>Proportion of B&M Tonnage in the Region's Consumption</u>
Grain	75.9%
Fertilizer	26.8%
Prepared feeds	22.5%

Since local production of feed grains is practically nil, the region's dairy, poultry, and livestock farmers are entirely dependent on grain shipments from the Midwest, and rail for all intents and purposes represents the only feasible method of shipment.

c. Fuel Items. Three fuel commodities--coal, fuel oil, and liquified petroleum gas--move by the B&M in significant quantities. Nearly the entire tonnage of B&M-carried coal goes to the Public Service Company in Bow,

¹ Figures for baseline year.

New Hampshire, and the B&M is their sole carrier. The company expects to continue burning its present maximum capacity of coal for the foreseeable future. Coal makes up 50 percent of their fuel sources for generating power, the rest consisting of fuel oil trucked from Portsmouth. On this basis, roughly one half of the company's 28,392 industrial/commercial customers and 206,048 residential customers may be considered to be dependent on the B&M-transported coal. (No attempt has been made to calculate the job loss that might result in this instance.) The company is New Hampshire's largest power company, and its service area covers 165 New Hampshire communities, ten Maine communities, and two or three Vermont communities.

Similarly, in the case of oil, a single public service company--the Holyoke Water Power Company--is the principal B&M user. The latter company uses the oil to generate electric power which is supplied to 75 industrial customers located in Holyoke and two communities of Chicopee and South Hadley. According to the firm which handles the sale of this oil for the supplying oil company, trucking the same volume over the distance of 134 rail miles would be twice as costly. However, unlike the Public Service Company of New Hampshire, the Holyoke Water Power Company does have alternate rail available (Penn Central).

Finally, in the case of liquified petroleum gas, the B&M carries 61.2 percent of all northern New England consumption.

d. Miscellaneous (Rock Salt). Northern New England, which is entirely dependent on external sources of rock salt for highway use, receives 45 percent of the region's requirements via the B&M. Shipment by alternate mode (truck) would probably double the transportation cost.

C. Conclusion

Whether measured in terms of the estimated 51,250 jobs that would be lost, the some \$811 million reduction in value added, or the 1 to 5 percent

price increase in essential consumer items that would likely occur, the total discontinuance of B&M service would have major and far-reaching effects on the New England economy. This is not to suggest that such total discontinuance is imminent or even likely. As discussed in subsequent sections, it is a virtual certainty that if the B&M were to go under, other connecting railroads would undoubtedly step in to operate most of the B&M main lines and at least some of the branch lines. But loss of even part of B&M service and the jobs dependent on that service could have major repercussions. It has been variously estimated that each job lost costs federal, state, and local governments an average of \$1,000 to \$3,000 annually in lost tax revenues, increased welfare and employment security service, and additional costs in attempting to attract new business to the area. On this basis, the estimated 51,250 jobs that would be lost if the B&M were to cease operations would cost the various levels of government some \$51.2 to \$153.8 million per year. At a time when the New England economy is already being buffeted by military base closings and the out-migration of certain industries, the area can ill afford the adverse economic consequence of a curtailment in B&M service.

It is also essential that the B&M bankruptcy be settled as quickly as possible. The present uncertainty regarding the future of rail freight service is affecting many firms which are necessarily reluctant to go forward with expansion or relocation plans until they are assured that they will continue to be served by rail. The effect of this uncertainty in terms of dollars and jobs cannot be measured, but it is clear from discussions with B&M customers and potential customers that it is having a significant impact on the region's economy.

Also of major concern to the Study Group is the potentially enormous environmental impact of a cessation of B&M service. While the major thrust of the Study Group's investigation was essentially economic, the freight flow information developed during the course of the study provides a useful data base for identifying and measuring, albeit in gross terms, the potential impact on the

environment of a termination of B&M operations. For example, as shown in Exhibit VIII, the B&M in 1972 carried 14.1 million revenue tons of freight. Based upon an average motor carrier round-trip load factor of 14 tons, over one million truck trips would be required to move the 14.1 million tons of freight carried by the B&M. Clearly this would have a major impact on highway traffic in the five-state area covered by the B&M.

Perhaps more important would be the impact on the use of energy. In 1972 the B&M used 17.2 million gallons of diesel fuel oil in moving 2.6 billion revenue ton-miles of freight, thus averaging 151 ton-miles per gallon of diesel fuel. An average truck produces approximately 60 ton-miles per gallon. On this basis, if freight currently carried by the B&M were to be carried by truck, an additional 26.1 million gallons (43.3 minus 17.2) of fuel oil would be required. Assuming that an oil-fired fossil fuel generating plant uses approximately 650 gallons of No. 2 fuel oil in generating electricity for an average household over a year's period, the 26.1 million gallons of oil saved through use of B&M rail, rather than truck service, would be sufficient to supply the annual electricity requirements of some 40,154 households.

III. THE ECONOMIC VIABILITY OF THE B&M

A. Introduction

As discussed earlier, a principal objective of the Study Group was to make a realistic evaluation of the economic viability of the B&M, as it currently exists, and to determine what alternative courses of action were available for assuring continued availability of essential rail service. The Study Group has made such an analysis and, as one might expect in the case of a bankrupt firm, has found the financial and physical condition of the B&M to be critical and deteriorating.

The Study Group has further examined a wide range of possible remedial actions. Those which would result in a restructuring of the B&M fall into three general categories:

- Reorganization
- Merger
- Segmentation

These are discussed in the following sections of this chapter. The institutional factors and implementation mechanisms which could be involved in restructuring the B&M are discussed in Chapter IV.

B. The Prospects for Successful Reorganization

1. Background and Study Findings

On 20 December 1971, the B&M Trustees in Bankruptcy submitted a comprehensive Plan of Reorganization to the Federal District Court having jurisdiction over the B&M bankruptcy. In their plan, the Trustees reviewed the B&M's financial situation, developed a series of five-year (1972 to 1976) projections and examined various alternative courses of action that might be taken with respect to the B&M, including possible merger, segmentation, and liquidation, as well as reorganization. Based on this analysis, the Trustees concluded that the B&M could in fact be reorganized as a private enterprise and that such reorganization

III. THE ECONOMIC VIABILITY OF THE B&M

A. Introduction

As discussed earlier, a principal objective of the Study Group was to make a realistic evaluation of the economic viability of the B&M, as it currently exists, and to determine what alternative courses of action were available for assuring continued availability of essential rail service. The Study Group has made such an analysis and, as one might expect in the case of a bankrupt firm, has found the financial and physical condition of the B&M to be critical and deteriorating.

The Study Group has further examined a wide range of possible remedial actions. Those which would result in a restructuring of the B&M fall into three general categories:

- Reorganization
- Merger
- Segmentation

These are discussed in the following sections of this chapter. The institutional factors and implementation mechanisms which could be involved in restructuring the B&M are discussed in Chapter IV.

B. The Prospects for Successful Reorganization

1. Background and Study Findings

On 20 December 1971, the B&M Trustees in Bankruptcy submitted a comprehensive Plan of Reorganization to the Federal District Court having jurisdiction over the B&M bankruptcy. In their plan, the Trustees reviewed the B&M's financial situation, developed a series of five-year (1972 to 1976) projections and examined various alternative courses of action that might be taken with respect to the B&M, including possible merger, segmentation, and liquidation, as well as reorganization. Based on this analysis, the Trustees concluded that the B&M could in fact be reorganized as a private enterprise and that such reorganization

would in fact be in the best interest of both the creditors and the public. Thereupon they proposed, and the court agreed, that the Trustees should proceed with their plan to reorganize the B&M as of 1 January 1975.

Subsequently in the spring and early summer of 1972, the ICC held a series of hearings to determine if a lack of B&M operating funds threatened essential rail service. During the course of these hearings, ICC Administrative Law Judge V. A. Von Rinteln made an extensive analysis of the Trustees' proposed plan of reorganization and subsequently issued a report, dated 13 February 1972, supporting the plan in principle.

Stripped of its emotional overtones, the key issue raised by reorganization is whether there is a reasonable basis for believing that the B&M can be transformed from a railroad which has lost increasing amounts of money over the last 12 years, including \$6,498,674 in 1971 and \$11,641,058 in 1972, into a railroad which can at least break even and preferably earn a profit. Both the Trustees and Judge Von Rinteln clearly felt that such a turn around could in fact be accomplished and offered a series of revenue and cost projections to back up their position. (See Exhibit VIII). The Study Group has subsequently developed its own projections and has reached the contrary conclusion.

The obviously major differences in the projected 1976 net income figures are the product of several key assumptions regarding future revenues and costs. Some of the most important assumptions are discussed in the following subsections.

a. Projected Increases in Freight Tonnage. The Trustees' revenue projections are predicated on the assumption that total B&M freight tonnage would increase at a rate equal to 75 percent of the GNP rate of growth forecasted by the Wharton Econometric Model. To this, the Trustees added 300,000 tons in 1972 and 1973 and 400,000 tons in each of the three following years to reflect

EXHIBIT VIII
ALTERNATE PROJECTIONS OF B&M FREIGHT TONNAGE, REVENUES AND EXPENSES
(Millions)

	B&M TRUSTEES		V.A. VON RINTELN		STUDY GROUP		IOC FORM A
	1972	1973-76 Changes	1972	1973-76 Changes	1972	1973-76 Changes	1972
A. Freight Tonnage 1972	15.3	1.8	14.3	2.2	14.4	(0.2)	14.1
Add projected increases (decreases) in the period 1973-76							
Total: Tonnage projection for 1976		17.1		16.5		14.2	
B. Freight Revenue 1972	\$72.2		\$68.2		\$66.3		\$66.5
Add projected (1973-76) increases (decreases) from:							
• Freight tonnage gain (loss)		\$ 7.8		\$10.0		\$ (0.7)	
• Additional TOFC and other new accounts		0.4		0.0		0.0	
• Sales blitz		2.0		0.0		0.0	
• General rate increases @ 2.5% per year		7.9		7.8		6.4	
• Selective rate increases for, or elimination of, below-cost commodities		3.0		0.0		0.3	
• Proposed Mass. and N.H. freight subsidies		4.0		0.0		0.0	
Total: Revenue projection for 1976		\$25.1		\$17.8		\$ 6.0	\$72.3
		\$97.3		\$86.1			
C. Freight Operating Expenses for 1972	\$58.6		\$58.2		\$58.7		\$58.9
Add projected (1973-76) increases (decreases) from:							
• Abandonment		\$ (1.0)		\$ (1.0)		\$ (1.3)	
• Normalized maintenance ²		1.7		0.0		1.6	
• Increased productivity and/or capital improvement program savings		(2.6)		(3.3)		0.0	
• Work force reduction		(3.9)		(3.9)		(0.7)	
• Changes in work rules		(1.0)		0.0		0.0	
• Changes in freight tonnage (excluding related work force reduction)		0.0		0.0		(0.7)	
• Inflation		15.4		11.4		9.8	
Total: Freight operating expense projection for 1976		\$ 8.6		\$ 3.2		\$ 8.7	
		67.2		61.4		67.4	
D. Net Freight Operating Revenue (B - C)	\$13.6	\$30.1	\$10.0	\$24.7	\$ 7.6	\$ 4.9	\$ 7.6
E. Taxes and Net Rents 1972	14.6		14.6		12.3		12.4
Add projected (1973-1976) increases (decreases) from:							
• Changes in property assessments/tax rate increases		3.7		3.7		2.7	
• Tax abatements		(1.5)		(0.5)		(0.5)	
• Savings from sale of property/reduction in work force		(0.1)		(0.1)		(0.3)	
• Portland Terminal rental reduction		(1.0)		0.0		0.0	
• Other rental		0.0		0.0		(0.1)	
Total: Taxes and net rents projection for 1976		\$ 1.1		\$ 3.1		\$ 1.8	
		15.7		17.7		14.1	
F. Net Railway (freight only) Operating Income (D - E)	\$(1.0)	\$14.4	\$(4.6)	\$ 7.0	\$(4.7)	\$(9.2)	\$(4.8)
G. Miscellaneous and Fixed Items	4.3		4.3		4.1		4.1
H. Net Income (F - G)	\$(5.3)	\$10.1	\$(8.4)	\$ 2.7	\$(8.8)	\$(13.3)	\$(8.9)

¹To assure comparability, the Study Group's projections for 1976 are based on the Trustee's abandonment plan.

²Normalized maintenance does not include equipment maintenance.

an anticipated net increase in new plants and accounts on the B&M and an expected increase in TOFC traffic.¹ This resulted in the following total yearly tonnage increases:

1972	5.5%	1975	3.1%
1973	2.6%	1976	2.4%
1974	3.2%		

Judge Von Rinteln, while agreeing generally with the Trustees' approach, felt that projections of future freight tonnage were better based on an index more directly related to rail activity. For this purpose he selected the national freight projection statistics prepared by the U.S. Department of Commerce (U.S. Industrial Outlook 1972 with Projections to 1980) which showed a 3 percent increase in 1973, and a 4 percent year increase thereafter. No adjustment was made to reflect possible differences among either regions or specific railroads.

The Study Group could find no meaningful historical correlation between total B&M tonnage and any of the common economic indices. Accordingly, separate commodity-by-commodity five-year projections, based on nine years of commodity statistics modified by surveys and general knowledge of New England business conditions, were prepared for each of the 80 largest tonnage commodities (comprising 90 percent of the total B&M tonnage) together with a composite projection for the remaining commodities. When combined, these 80 projections indicated a total 1976 tonnage of 14,268,592 tons, or approximately 99 percent of the total tonnage in the baseline year (October 1971 - September

¹ It is not clear from the Trustees' report whether their tonnage projections included decreases in tonnage resulting from their proposed abandonment program. The Study Group simulation results suggest that if the Trustees' abandonment program had been implemented in the base year (October 1971 - September 1972), and if no tonnage from the abandoned lines had been retained (the assumption made by the Trustees in their abandonment plan), approximately 448,000 tons of freight, or 3 percent of the total B&M tonnage, would have been lost.

1972). The 1976 projection assumes (i) completion of the abandonment program proposed by the Trustees and (ii) 24 percent retention of total freight tonnage on the abandoned lines. If the Trustees' proposed abandonments are not implemented, the Study Group's projection of 1976 freight volume is 14,609,072 tons, or approximately 101% of the total tonnage in the baseline year. Consequently the Study Group has concluded that in the near term the best that can be expected is that tonnage will be maintained at about the present volume.

b. Sales Blitz and Other New Accounts. In addition to the tonnage increases projected above for existing accounts, the Trustees also proposed to achieve further increases in tonnage through a so-called "sales blitz" directed at shippers not now using the B&M. While the Trustees did not specify how much additional tonnage they expected to generate through such a sales blitz, their estimate of \$2 million in additional revenue would appear to indicate approximately 400,000 tons of additional freight. Neither Judge Von Rintel nor the Study Group felt that this additional increase in tonnage (2 percent) could reasonably be expected over and above the tonnage increases already included.

c. Freight Rate Increases. Projections made by both the Trustees and Judge Von Rintel assume general "across-the-board" rate increases of approximately 2.5 percent per year. The Study Group has used the same 2.5 percent estimate in order to assure maximum comparability between its projections and those of the Trustees and Judge Von Rintel. However, it should be pointed out that the 2.5 percent per year increase in rates is substantially less than the 4.5 to 5.0 percent cost inflation factor used by the Trustees and Judge Von Rintel and the 4 percent cost inflation factor used by the Study Group.¹ Thus unless this differential in the rate of increase of freight revenues on the one hand and

¹The inflation factor used by both the Trustees and Judge Von Rintel was 9 percent per year applied to wage costs. Since wage costs are approximately 50 percent of total B&M costs, the average overall inflation rate is approximately 4.5 percent.

freight costs on the other can be overcome through other measures, the B&M financial situation will almost certainly deteriorate in the future. Both the Trustees and Judge Von Rinteln believed in this regard that increasing revenues (including a provision in the Trustees' projections for the payment of state subsidies) and increased productivity could and would bridge the gap. As discussed further below, the Study Group is less confident that increases in either revenues or productivity are forthcoming, or indeed that inflation can be held at 4 to 5 percent per year. On the other hand, the Study Group would agree with both the Trustees and Judge Von Rinteln that an increase in freight rates of more than 2.5 percent may also result in a further erosion of freight volume.

d. Freight Subsidies. Originally the Trustees had proposed that Massachusetts pay a \$4.2 million freight subsidy (including a \$1 million tax abatement), and that New Hampshire pay a subsidy of either \$2.5 million (including a \$100,000 tax abatement) if all New Hampshire lines were to be operated or \$2.1 million (including an unspecified tax abatement) if the Trustees' abandonment program were implemented. These proposals were later scaled down to a combined total of \$4 million of subsidies plus tax abatements, totalling \$1.5 million, from all five states served by the B&M. The Trustees based their subsidy proposals on the fact that their analysis of revenues and costs of five major segments of the B&M system had revealed that the so-called Massachusetts and New Hampshire segments fell \$4.2 and \$2.5 million short, respectively, of making a full contribution to overhead. It is clear from the Study Group's projection of a \$13.3 million deficit in 1976 (see Exhibit VIII) that even were the states to agree to such subsidies, the B&M would not realize a profit.

Neither Judge Von Rinteln nor the Study Group included subsidies in their freight revenue projections.

e. Cost Savings from Abandonment. In their reorganization plan the Trustees proposed the abandonment of some 370 miles of lines at an estimated annual savings of \$1 million. The Study Group subsequently tested the Trustees'

abandonment proposal on its computerized simulation model and concluded that the Trustees' \$1 million estimate was conservative. Results of the simulation indicated that if the abandonment proposal were implemented, freight operating expenses would be reduced by \$1.3 million per year and taxes and rents would be reduced another \$300,000. However, the simulation results also indicated that if, as assumed by the Trustees, all of the freight tonnage originating or terminating on the abandoned lines were lost to the B&M, the B&M would experience a \$2.1 million decline in revenues, for a net loss of \$500,000. If, on the other hand, the B&M were able (as a Study Group survey of B&M shippers suggested would be the case) to retain 24 percent of the freight previously shipped over the abandoned lines by diverting it to alternate B&M shipping points, the amount of lost revenue would be reduced to approximately \$1.6 million, resulting in an essentially break-even situation. The Study Group also simulated a number of other, more extensive abandonment plans. Based on these simulations, the Study Group concluded that the Trustees' abandonment plan was indeed the maximum one feasible and that any attempt to abandon further lines would result in a more rapid reduction of revenues than of costs.

f. Level of Maintenance Expenditures. Over the past 15 to 20 years, the B&M has experienced a steady decline in the level of maintenance of its physical plant because expenditures for maintenance of way and structures and equipment were held to an absolute minimum. Results of a recent engineering study¹ conducted for the Study Group suggested that some \$48 million of maintenance has been deferred in recent years; that is, some \$48 million of maintenance that should have been done to keep the railroad in top operating condition was, in fact, not performed for lack of funds.

The Trustees, in their reorganization proposal, provided for an annual increase in maintenance expenditures over previous spartan years (1960 to 1970) of approximately \$1.7 million. Results of the engineering study conducted by the Study Group suggest that an annual increase of \$1.6 million (over the 1972 expenditure level of approximately \$13.3 million) is required in order to reach

¹Prepared by Thomas K. Dyer, Inc., June 1973.

a "normalized" maintenance expenditure level; that is, in order to reach a maintenance level which will assure maintenance of equipment and rights of way in their present condition. Above and beyond this \$1.6 million, an additional \$4.8 million a year (or \$47.8 million over the next 10 years) would be required in order to return the railroad to its former condition. While recognizing that this latter expenditure would result in smoother rides and higher speeds, the Study Group concluded that these and other possible benefits were not sufficient to justify the additional so-called "deferred maintenance" costs and accordingly did not include these costs in its estimate.

g. Cost Savings from Capital Improvement and Increased Productivity. In their reorganization plan, the Trustees proposed a \$5.4 million capital improvement program (CIP) which they believed would produce annual gross savings reaching \$2.6 million in 1976.¹ Judge Von Rintel questioned the validity of attempting to estimate CIP cost savings directly as the Trustees had done and proposed that since such CIP savings were essentially designed to increase productivity, a better approach would be to adjust operating costs downward through a productivity index applied across the board to all operating expenses. For this purpose he included an increase in productivity of 3 percent for 1973 and 4 percent per year for subsequent years.

h. Cost Savings from Personnel Reductions. Both the Trustees and Judge Von Rintel provide for an overall reduction of 300 B&M employees in the period 1972 to 1976, at an estimated annual savings of \$3.9 million. The Study Group, however, questions the realism of the proposed cut, particularly in view of the fact that a 300-man reduction already was carried out in 1970 - 1971. Neither the Trustees nor Judge Von Rintel specified where these additional manpower reductions would be made, and Judge Von Rintel notes that there was considerable difference of opinion among B&M personnel on this

¹ From these gross savings the Trustees deducted that \$1.7 million in additional maintenance costs discussed earlier to arrive at a net annual savings of \$0.9 million.

subject. Apparently, operating personnel were the principal target since the methods cited by the Trustees for accomplishing the manpower savings included elimination of shifts, rescheduling of trains, improvement of work practices and concentration of headquarters operating personnel in Billerica, purchase of new equipment, reduction of wrecks, closing of yards, reduction of switch tracks, and transfer of 51 employees to the MBTA account. The Study Group's analysis, on the other hand, suggests that other, nonoperating areas may provide more logical targets for manpower reductions.

Quite apart from the feasibility of the proposed 300-employee reduction, the Study Group questions whether the Trustees were being realistic in including not only the \$3.9 million savings from the proposed employee reduction, but also \$0.9 million in CIP savings (presumably resulting in large measure from personnel reductions) and a 4 percent per year increase in total B&M freight tonnage (presumably requiring additional personnel).

i. Taxes and Rents. The Trustees' projections of taxes and rental expenses were apparently predicated on the following assumptions:

- Approximately \$0.1 million savings in property taxes and rents as a result of the proposed abandonment program.
- Receipt of tax abatements of \$1.2 million out of a total of \$1.7 million owed in property taxes for 1971 and a \$1.5 million annual abatement thereafter.
- An increase of 5 percent per year in tax assessments on remaining property.
- Continuation of MBTA payments of some \$300,000 for property taxes.
- Reduction of Portland Terminal rents as much as \$1.0 million through renegotiation of the lease.

Judge Von Rinteln has used the same projections for taxes and net rents as the Trustees, except that he has projected tax abatements of \$500,000 rather than the \$1.2 to \$1.5 million assumed by the Trustees. Judge Von Rinteln further noted--but did not adjust his projections accordingly--the likelihood of a \$9 to \$10 million increase in the B&M assessments in the future. Such an increase would approximately double the B&M's current property tax bill.

The Study Group's 1972 figure is based on the payroll, real estate and property taxes, and net rental expenses accrued during the baseline year (October 1971 to September 1972). The 1976 projection is based on the following adjustments in the baseline data:

- A reduction of \$85,179 in payroll taxes due to a 2.5 percent reduction in force which in turn is directly due to reduced freight volume and projected road abandonments.
- A reduction of \$110,000 in real estate and property taxes as a result of road abandonments.
- A reduction of \$116,609 in net rents due to reduced volume and abandonments.

If Judge Von Rinteln is correct in his belief that real estate assessments are likely to escalate at a substantially faster rate than the overall rate of inflation, then an upward adjustment should be made in the Study Group's projections.

2. Study Group Conclusions

Based on its analysis, the Study Group can see no reasonable prospect for reorganizing the B&M as an independent private enterprise. The fundamental problem which confronts the B&M--and a number of other eastern railroads--is that revenues have not kept up with costs. Furthermore, a high percentage of railroad operating expenses appear to be fixed, i. e. they do not vary with freight volume. In the case of the B&M, at least 40% of total operating

costs are presently fixed. For railroads such as the B&M where the volume of tonnage is declining or at best remaining constant, this situation presages a constantly worsening economic situation. Because of the high percentage of fixed costs, normal cost-cutting methods are ineffective. In particular, attempts to cut costs through substantial rail line abandonments only serve to accelerate the loss in revenue base and appear to lead almost inexorably to a further worsening of the railroad's economic position.

This relationship of revenues and costs also largely explains the major differences between the projections of the Trustees and Judge Von Rintel on the one hand and the Study Group on the other. Both the Trustees and Judge Von Rintel predicated their projections on a reversal of the long downward trend in B&M freight tonnage. This is the primary reason that the Trustees' projections show the B&M to be economically viable. The Study Group, however, concluded that, at least in the near future and under current national and regional circumstances, the volume of B&M tonnage would further erode or, in the most favorable instance, hold at the present level. As a result, the B&M's financial situation would continue to deteriorate.

C. The Merger Potential

1. Background and Study Findings

Over the past several years a number of proposals have been put forward for merging the B&M with various other railroads, particularly the Norfolk and Western. In 1967 the ICC found that the B&M should be made a part of the N&W system (ICC Docket No. 21510), but subsequent negotiations failed in establishing a price agreeable to both parties. Recently, much attention has been focused on a possible B&M merger with a combination of one or more of three other railroads: the Bangor and Aroostook (BAR), Delaware and Hudson (D&H), and Maine Central (MeC). For example, both the B&M Trustees and ICC Administrative Law Judge Von Rintel saw a number of possible advantages

through a two-way merger of the B&M and MeC. The Trustees estimated--and both Judge Von Rintel and the consultant for the institutional bondholders agreed-- that a B&M-MeC merger would produce annual savings of \$4 to \$5 million as a result of the following:

- Through-train operation
- Pooled motive power and shop facilities
- Reduced overhead
- Portland Terminal savings
- Rerouting of MeC Mountain Division traffic over B&M tracks.

While less optimistic in their estimate of potential savings, MeC management agreed that some cost savings/revenue increases would occur in the following areas as a result of a merger with the B&M:

- Consolidation of car and locomotive shops
- Redirection of traffic from the Canadian National, Canadian Pacific, and St. Johnsbury and Lamoille County Railroads (Merger is likely to have an adverse impact on the St. Johnsbury and Lamoille County Railroad.)
- Consolidation of inspection and clerical staff of the Portland Terminal
- Possible transfer of part of the classification work now done at Portland Terminal to yards east or west of Portland

A second merger alternative would join the B&M, MeC, BAR, and possibly the Delaware & Hudson into a single rail system. The principal advocate of this alternative is Amoskeag Company--owner of the Bangor & Aroostook Railroad and over 25 percent of the common stock (non-voting) of the Maine Central Railroad--with some interest shown by both the B&M Trustees and Judge Von Rintel. Referring to a three-way merger of the B&M, MeC, and BAR, the Amoskeag brief (before the ICC in Ex. Parte No. 293, the "Northeastern Railroad Investigation") stated as follows:

A consolidated system, with separate corporate divisions for each railroad and a parent holding company, might well also include a D&H division connecting with B&M at Mechanicville, New York, which would add two important terminals, one with Penn Central at Wilkes-Barre and the other with the Erie-Lackawanna at Binghamton, New York. Unification by Amoskeag or Passaconaway [a wholly-owned subsidiary of Amoskeag] could be phased over a period of time to permit the new system to "digest" one acquisition before moving on to the next. By using separate corporate divisions, one railroad would not, upon consolidation, have to assume the fixed debt of the other.

With such unification, the following could result:

- (i) establishment of equipment pools for common use, thus improving utilization of equipment and eliminating duplication;
- (ii) reduction of the number of heavy repair facilities;
- (iii) Opportunity to lease surplus equipment which would result from better utilization under a single management;
- (iv) consolidation of numerous administrative and departmental personnel;
- (v) consolidation of purchases of equipment and stores which could reduce inventory;
- (vi) improved operations with less pre-classifications and reduction of terminal handling time;
- (vii) centralized single control over the entire rail system, allowing for improved administrative direction by one rather than three (or four) chief executives;
- (viii) consolidation of freight and traffic departments;
- (ix) refunding of debt on a favorable basis due to profitability giving one management increased bargaining power with financial institutions.

A consolidation of the three northern New England railroads (or four, if D&H is included) would not involve the problem experienced by the Penn Central. These are substantially end-to-end railroads.

The northern New England system would give shippers the alternative of using the Penn Central or the Norfolk and Western at New England gateways. The better performance which would come from a unified rail system would mean increased competition for truckers operating in and through New England. The favorable environmental effects of increasing rail traffic while at the same time reducing highway traffic is well known.

The Study Group has analyzed various of the proposed combinations and has developed estimates of potential revenue gains and/or cost savings that could be expected to accrue through such mergers. (See Exhibit IX.) In reviewing these estimates, it should be kept in mind that the Study Group did not have access to internal marketing or operating data of the various merger candidates other than the B&M, and that as a result it was necessary to rely largely on published data for purposes of analysis. Notwithstanding this lack of access, the Study Group feels reasonably certain, based on its discussions with various of the parties, that its estimates are sufficient to permit reasonable conclusions to be drawn as to whether merger offers a likely solution to the B&M's financial plight.

It is clear that merger is one of the types of restructuring which addresses the problems of the B&M and the New England railroads in general. By merger it should be possible to reduce the substantial fixed cost items through consolidation of facilities, overhead and management functions. Nevertheless, results of the Study Group's analysis set forth in Exhibit IX are not encouraging. The analysis shows each of the merger combinations with a substantial net deficit. The best candidate from a profitability standpoint is the four-way merger; but even in this case, in spite of estimated merger savings of over 50%, the merged firm would still not break into the black. Unfortunately, the very size and number of participants involved in the four-way merger makes it the most difficult to carry out as well as the one most susceptible to management and operating problems.

EXHIBIT IX
PROJECTIONS OF REVENUE INCREASES AND COST REDUCTIONS
FOR VARIOUS MERGER COMBINATIONS (000)

	<u>B&M/MeC</u>	<u>B&M/D&H</u>	<u>B&M/MeC/BAR</u>	<u>B&M/MeC/D&H</u>	<u>B&M/MeC/BAR/D&H</u>
<u>Increased Revenues</u>					
1. Diversion of Mountain Division Traffic	\$ 299	N.A.	\$ 299	\$ 299 ¹	\$ 299 ¹
2. Rediversion of BAR Traffic from CP	<u>N.A.</u>	<u>N.A.</u>	<u>\$ 607</u>	<u>N.A.</u>	<u>\$ 607</u>
Subtotal: Increase in Revenues	\$ 299		\$ 906	\$ 299	\$ 906
<u>Reduced Costs</u>					
1. Yard and Terminal Consolidation					
a. Portland Terminal-Rigby	\$ 1,400	N.A.	\$ 1,400	\$ 1,400	\$ 1,400
b. Northern Maine Junction	N.A.	N.A.	260	N.A.	260
c. Mechanicville	N.A.	1,000	N.A.	1,000	1,000
2. Heavy Repair Facility Consolidation	250	250	500	500	750
3. Inventory Consolidation	284	243	314	318	407
4. Better Equipment Utilization	58	122	84	180	207
5. Administrative/Minor Dept. Consolidation	<u>965</u>	<u>1,190</u>	<u>1,100</u>	<u>1,400</u>	<u>1,500</u>
	\$ 2,957	\$ 2,805	\$ 3,658	\$ 4,798	\$ 5,524
<u>Total Increase in NROI and Net Income</u>	\$ 3,256	\$ 2,805	\$ 4,564	\$ 5,097	\$ 6,430
<u>Pro Forma Income Statement Based on Consolidated 1972 Income Statements</u>					
Consolidated 1972 NROI ²	\$ (6,075)	\$ (5,863)	\$ (3,331)	\$ (4,834)	\$ (2,090)
Add: Incremental Income	<u>3,006</u>	<u>2,556</u>	<u>4,064</u>	<u>4,597</u>	<u>5,680</u>
Pro Forma NROI of Merged Railway	\$ (3,069)	\$ (3,307)	\$ (733)	\$ (237)	\$ 3,590
Less: Net Misc. Deductions	<u>(619)</u>	<u>(337)</u>	<u>(1,379)</u>	<u>(752)</u>	<u>\$ (1,512)</u>
Fixed Charges	4,455	5,464	5,765	6,591	7,901
Cont. Interest	<u>946</u>	<u>754</u>	<u>1,084</u>	<u>946</u>	<u>1,084</u>
Pro Forma Net Income of Merged Railway (Less Extraordinary and Prior Period Items)	\$ (7,851)	\$ (9,188)	\$ (6,203)	\$ (7,022)	\$ (3,883)

¹Includes diversion only as far as Mechanicville/Rotterdam Junction. Some additional incremental income would probably result from movement over D&H lines to the south and west of Mechanicville.

²Includes \$1.6 million for B&M normalized maintenance.

Therefore, while merger is conceptually the type of restructuring which can cut the substantial fixed costs of the B&M and its connecting railroads, the Study Group believes these advantages can be attained only if several serious institutional problems can be overcome.

The Study Group is concerned that the traditional arguments in favor of merger ignore the exigencies of time and practical experience. Railroad mergers have traditionally required an inordinate amount of time to consummate and time is not on the side of the B&M. Perhaps more important, such mergers have seldom lived up to their advanced billing of increased efficiencies and higher profits. Many factors are undoubtedly responsible for this, but certainly one of the most important is to be found in the divergent and often conflicting interests of the many parties that must implicitly or explicitly approve a proposed merger before it can be consummated. Often cited in this regard is the problem of obtaining union agreement in order to proceed with merger. Moreover, there is the long-term problem of management, which is no more likely to support a merger plan which threatens management jobs than the unions are to support a plan which threatens the jobs of union members. As a result, the opportunities for increased efficiencies and cost reductions, which in theory are available through merger, are in practice likely to be shunted aside in the search for a compromise which will assure agreement to the merger by the various interested parties.

Furthermore a B&M merger with the BAR, D&H, and/or MeC would be an "end-to-end" merger; that is the railroads would be joined at their interchange points as there is virtually no overlapping, geographically, of the four lines. Thus it would be quite different from the merger of the Pennsylvania and New York Central railroads where it was expected that merger would eliminate many duplicative rail lines--some within 50 feet of each other--with substantial cost savings. In an end-to-end merger the dominant opportunities for cost

reductions are streamlining of classification activities at interchange points, improved equipment utilization, consolidation of equipment maintenance, and consolidation of clerical and management support functions. The savings listed in Exhibit IX are those that the Study Group believes are realistically possible in the first several years of merger--the time span in which the economics of the B&M must be improved.

It is possible that even some of these costs savings may not be realized due to the institutional difficulties surrounding merger. For instance, if as suggested by Amoskeag in its brief before Judge Von Rinteln, it would be necessary in any merger of the B&M with the BAR, D&H, and/or MeC to retain the corporate identity of each of the systems in the form of separate operating divisions, it seems doubtful to the Study Group that significant cost reductions could or would be made in the area of management and support personnel.

In addition to cost savings, merger may offer opportunities to obtain new revenues. Exhibit IX shows the Study Group's projections for the added revenues provided by a merged system. These increased revenues are based on changes in the routing of long haul freight within the merged system. As Exhibit IX points out, however, these greater revenues plus the cost savings still leave the merger combinations with substantial net losses. Thus in order to be profitable the merged system must attract significant amounts of new business through improved service; ~~but~~, in the opinion of the Study Group, the additional revenues which must be attracted for the various merger combinations to break even are so great that there is little likelihood they can be attained.

Based on the 1972 pro forma income statements and assuming that fixed costs are approximately 25 percent of total costs (and therefore that 25 cents of every additional dollar of new revenue represents incremental net income), the additional revenues required to break even would be as follows:

<u>Merger Combination</u>	<u>Projected Net Income (000)</u>	<u>Combined Present Total Revenues (000)</u>	<u>Additional Revenues Required to Break Even (000)</u>	<u>Percent of Revenues</u>
B&M/MeC	\$(7,851)	\$ 91,985	\$31,404	34.1
B&M/D&H	(9,188)	105,180	36,752	34.9
B&M/MeC/BAR	(6,203)	105,045	24,812	23.6
B&M/MeC/D&H	(7,022)	132,893	28,088	21.1
B&M/MeC/BAR/D&H	(3,883)	145,953	15,532	10.6

In sum, the Study Group concludes that merger can succeed only if the traditional institutional problems of merger can be surmounted. Otherwise, significant cost savings or new revenues are quite unlikely.

D. The Process of Segmentation

1. Background and Findings

As used herein, the term "segmentation" refers to the process of dividing the B&M system into integral parts or segments and selling or leasing some or all of these segments to two or more connecting railroads. The difference between segmentation and merger is thus one of degree. In the case of merger, the B&M as a corporate body would be combined with its merger partners to form a new corporate entity. In the case of segmentation, various parts or segments of the B&M system would be acquired by, and added to, various connecting railroads which would retain their corporate identities and structures.

There is perhaps even a finer line between the concepts of segmentation and liquidation. Under liquidation, the properties of the B&M would in effect be sold to the highest bidder. If the B&M were to be liquidated, it is entirely likely that one or more connecting railroads would in fact be the high bidder for certain B&M segments which offer a significant profit potential, and that these lines would continue to be operated as freight lines. At the risk of oversimplification, the difference between segmentation and liquidation under these circumstances turns largely on the degree to which a conscious effort is made to preserve rail service. Under the liquidation process, the continuation of rail service is

largely left up to the vagaries of the market place. Under segmentation, on the other hand, greater emphasis is placed upon identifying and planning for the continuation of essential service.

The concept of segmentation as a possible solution to the B&M's financial dilemma is scarcely a new one. The B&M Trustees, various B&M creditors, Judge Von Rintel, and representatives of several of the connecting railroads have all expressed varying interest in possible B&M segmentation. In their reorganization plan of 20 December 1971, the B&M Trustees discussed (and dismissed as premature) the possibility of selling off various B&M main lines to other railroads. Among the lines which they identified as likely candidates for segmentation, to which have been added a list of potential buyers or lessees, were the following:

<u>Segment</u>	<u>Potential Buyers or Lessees</u>
Worcester-Rigby/Portland	Maine Central Penn Central Canadian National
Boston-Mechanicville	Delaware and Hudson Penn Central Central Vermont
Connecticut River	Central Vermont Canadian Pacific Maine Central Delaware and Hudson Penn Central

Moreover, in two instances--sale of the Reading Line to the MBTA and sale of the Worcester-Gardner Line to the Providence and Worcester Railroad--the Trustees are in the final stages of partially implementing the segmentation concept.

The feasibility of segmenting the B&M obviously must turn in the final analysis on the profit potential which various B&M segments, either separately or in combination, offer to various connecting railroads as prospective buyers or lessees of such segments. If a segment or group of segments offers little or no prospect of providing an incremental profit to the prospective buyer/lessee (or preventing an erosion of existing profits through loss of competitive position), then the incentives necessary to implement segmentation will be missing.

Accordingly, a necessary first step in the Study Group's analysis of the feasibility of segmentation was to determine the freight revenues, direct and indirect costs, and resultant profit or loss generated by each of the 31 major B&M segments. For this purpose, the Study Group used its computational simulation model discussed earlier, which made it possible to test the profit impact on individual segments of a wide range of alternative segmentation plans.

Once the profitability of each segment under varying system configurations had been established, it was then necessary to determine what would happen to each segment's revenues, costs, and profits if it were operated by a connecting railroad rather than by the B&M. In view of the obvious importance of this issue, the Study Group conducted several different types of analyses, each designed to identify the impact on segment profits of ownership and operation by other than the B&M. Based on these analyses as well as discussions with various federal, state, and private railroad experts, the Study Group concluded that it would be reasonable to assume that, on the average, 20 percent of the total direct and indirect costs allocable to a segment could be saved through segmentation. If all current B&M segments were involved in segmentation (that is, if none were abandoned), the total savings would be approximately

\$15 million (20 percent x \$74 million).¹ In arriving at its estimate of 20 percent the Study Group reasoned that (i) all but one of the potential buyers of B&M segments had in recent years experienced a declining freight volume; (ii) the decline in volume had produced a substantial excess capacity, particularly in the areas of departmental and general overhead, superintendence and dispatch, equipment repair facilities, maintenance-of-way equipment, and yard capacity; and (iii) between a fifth and a third of total B&M costs were incurred for functions and activities which could be equally well performed using the excess capacity of, and at no additional cost to, the connecting lines. In the so-called hard-core fixed expense areas alone (departmental and general overhead, and superintendence and dispatch), the B&M incurred over \$14 million in expenses in the base-line year (1 October 1971 to 30 September 1972). To this can be added a part of various other expense categories which are at least partially fixed, as well as many of the various savings discussed earlier in connection with merger which are equally likely to accrue in the case of segmentation.

In short, the Study Group views its estimate of possible savings from segmentation as a reasonably conservative one. At the same time, it also recognizes that any such estimate is at best an approximation and that more detailed on-site analysis of available capacities and resources of prospective buyers would be desirable prior to any final action. Preferably this further in-depth analysis should be performed by, or at least in conjunction with, the prospective buyers themselves as the ones in the best position to evaluate their capabilities to assimilate additional B&M segments.

¹The total cost figure of \$75,038,840 is based on the B&M's fully allocated cost for freight before debt service and extraordinary charges in the period 1 October 1971 to 30 September 1972 plus an additional allowance of \$1.6 million to normalize right-of-way maintenance costs. The total cost figure, and hence the 20 percent savings, will, of course, vary depending on the form of the segmentation plan.

Having established the probable level of savings from segmentation, the final step in the Study Group's segmentation analysis was to determine how the B&M might best be segmented; that is, how the various 31 B&M segments (or some lesser number if desirable) should be grouped or packaged. Toward this end, a number of criteria were established by which the number of possible combinations could be reduced to a manageable number. The criteria used in this initial screening process included the following:

- Each group of segments should be potentially profitable.
- Segments grouped together must be contiguous and reasonably compact geographically.
- Each group of segments should have at least two prospective buyers.
- Each group of segments should be structured to represent a logical extension of the territory of such prospective buyers.
- Each group of segments should have a significant amount of interlining traffic with its prospective buyers.
- The segments should be grouped so as to minimize shorthauling.
- The segments should not be grouped in a manner which would significantly increase the existing competitive position of any one connecting railroad over the others.
- Main lines should not be divided, unless necessary to meet one of the above criteria.

Based on the initial screening, the Study Group identified eight alternate segmentation plans which met the above criteria. Each of the eight plans included essentially three groups of segments: one composed of various segments along the Connecticut River and in western New Hampshire; a second consisting of

segments along and tied into the East-West main line through Massachusetts and eastern New York; and the third composed of segments along and in the proximity of the Worcester-Rigby/Portland main line and in eastern New Hampshire. While the eight plans had the same three major groupings, they each differed with regard to the particular segments included in each of the three groupings.

The eight alternatives were then screened against three additional criteria:

- The economic viability of each plan in terms of the estimated profit that would be generated for the buyers and, hence, the capital structure that could be supported under each plan.
- The economic impact of each plan measured in terms of the total number of jobs that were directly and indirectly supported by the segments included in each plan.
- The competitive impact on rail service, rates, and the like.

Results of this second screening indicated that two of the eight remaining segmentation plans best met all three criteria. These two plans are set forth in Exhibit X. Both plans would provide continued operation of virtually all lines currently operated by the B&M and would thus assure the continuation of the many firms and jobs in New England which are dependent on B&M rail service. The principal difference between the two plans lies in the way in which the various lines have been grouped. While the differences in the groupings were relatively minor, the Study Group sees some advantages, from a management standpoint, in the somewhat more geographically compact nature of the groupings in Plan 1. On the other hand, Plan 2 provides a better financial balance.

The segmentation analysis--as seen in Exhibit X--demonstrates that approximately \$10 million in net revenue could be realized by the railroads which operate the B&M segments. The division of revenues among the segments is based on an apportionment of revenue strictly by car revenue-mile. However,

EXHIBIT X
PROPOSED SEGMENTATION PLANS

Plan 1	Segment Numbers (See Map)	Incremental ¹ Revenue (000)	Incremental Cost (000) ¹	Incremental Net Income (000) ¹	Potential Acquiring Railroads
East-West Lines					
Rotterdam Jct. -Lowell Jct. Worcester-Ayer Inner I-495 Lines	8-13, 19-21 18 7, 14-16	\$46,487	\$37,025	\$9,462	Central Vt. (partial) Delaware & Hudson Penn Central Prov. & Worc. (partial)
Connecticut River Lines					
Springfield-Berlin, N.H. White River Jct. -No. Chelmsford Concord-Lincoln, N.H.	1-6, 17 25-27 31	11,834	11,780	54	Canadian Pacific Central Vermont Delaware & Hudson Maine Central Penn Central State of Vermont
Coastal Lines					
Lowell Jct. -Rigby/Portland Lawrence-Manchester-Salisbury Rollingsford-Mt. Whittier	22-24 28, 29 30	7,946	7,474	472	Canadian National Maine Central Penn Central
Plan 2					
East-West Lines					
Rotterdam Jct. -Lowell Jct. Worcester-Ayer Inner I-495 No. Chelmsford-Lincoln, N.H.	8-13, 19-21 18 7, 14-16 25, 26, 31	47,923	39,405	8,518	Central Vt. (partial) Delaware & Hudson Maine Central Penn Central Prov. & Worc. (partial)
Connecticut River Lines					
Springfield-Berlin, N.H. White River Jct. -Concord	1-6, 17 27	10,398	9,400	998	Canadian Pacific Central Vermont Delaware & Hudson Penn Central State of Vermont
Coastal Lines					
Lowell Jct. -Rigby/Portland Lawrence-Manchester-Salisbury Rollingsford-Mt. Whittier	22-24 28, 29 30	7,946	7,474	472	Canadian National Maine Central Penn Central

¹The term "incremental" refers to the fact that the revenues, cost, and income accruing from the various B&M segments would be additional to those currently incurred by possible buyers. The incremental cost and income figures are exclusive of debt service.

in the reality of segmentation, the operating railroads would negotiate such divisions of revenues and the probable result would be a more equitable balance of net revenues among the railroads which operate the segments of the B&M.

2. Conclusion

On balance, the Study Group believes that segmentation offers the best hope for preserving the B&M's important services for the region. The Study Group realizes that this conclusion is not likely to be received enthusiastically by many New Englanders who view the B&M as a major institution; however, the Study Group analysis shows that under current economic and practical conditions, segmentation offers a realistic possibility for resolution of the B&M's financial problems and at the same time would preserve nearly all of the present B&M freight services. While merger theoretically offers a greater opportunity for cost savings, in the judgment of the Study Group segmentation involves a set of institutional factors which offer a more likely chance of attaining such savings.

Wherein merger involves essentially a pooling of resources, segmentation entails an arm's length transaction between buyer and seller for the sale and purchase of physical property. The distinction between the joining of ongoing operations in the case of merger and the sale and purchase of physical property in the case of segmentation is a fundamental one which is reflected in the attitudes, outlooks, and objectives of the parties. This is not to suggest that both management and labor will not be as concerned about job protection¹ in the case of segmentation as in the case of merger; but by the same token, there is every reason to believe that the segment buyer will be inclined to take a long hard look at claims that surplus jobs, facilities, and overhead automatically go with rights-of-way and tackage acquired.

¹In determining what protection payments will have to be made to B&M employees who lose jobs as a result of abandonments and/or efficiency measures, one may refer to a recent court decision, F.D. No. 26659, on protection payments to Central New Jersey (CNJ) Railroad employees. In this decision a distinction is made

Thus, while the Study Group believes that segmentation offers a less costly, less risky, and less time-consuming alternative than merger, it also should be stressed that merger and segmentation need not be considered as mutually exclusive. To the contrary, B&M segmentation in the near term may well be a logical first step in the longer-term merger of various railroads into a Northern New England Railroad.

between protection afforded when prosperous railroads merge and money-saving abandonments are made and the current abandonments made by the bankrupt Northeast railroads. In the former cases, the Washington Job Protection Agreement of 1936, the New Orleans conditions, and the Burlington conditions were applied. These guaranteed that employees retained in lower jobs or discharged employees received the difference between their previous higher compensation and their lesser compensation for a future period of 4 to 5 years. Another alternative was a lump-sum separation allowance of up to 12 months' pay.

In the Jersey Central case, three months' severance pay was to be given those employees having more than one year's seniority, who otherwise would be displaced and left without suitable railroad employment. Affected employees re- would receive payment for accrued vacation time not to exceed three weeks. Any earnings in railroad service or outside employment or benefits would not decrease severance payments. Much effort has been made to find employment for displaced workers. The railroad has taken the position that CNJ workers offered railroad jobs in other areas are not entitled to protection. Claims have been filed but no protection has been paid to date.

IV. PRODUCING A SOLUTION

A. Introduction

This section discusses those measures and devices which may play an important role in a solution to the problems of the B&M. Included in the discussion are a number of measures which, though they appear unlikely to make a significant contribution, merit discussion because they are often mentioned by others.

Our analysis has made it clear that a fundamental restructuring of the B&M freight system is required since substantial increases in tonnage and revenue are unlikely under existing circumstances. The measures discussed below are largely aimed at producing such restructuring. It has not been possible to draw conclusions about the effectiveness and, indeed, the need for most of these measures since this is greatly dependent on several factors which cannot be readily predicted: (1) the willingness of the private sector to invest in a restructured railroad, (2) the willingness of the present B&M creditors to accept the debt write-down which must accompany restructuring, (3) the rulings of the ICC and bankruptcy court on the necessity for continuing the rail services and on the disposition of the creditors' claims, and (4) actions Congress may take in attempting to solve the problems of the northeast railroads. Clearly the situation is a fluid one. However, the Study Group is convinced a successful outcome can obtain from earnest and frank discussions and cooperation amongst the many interested parties.

B. The Context of the Northeast Rail Problem

The B&M is not alone in its dire financial situation. Five other Class I railroads in the northeastern U.S. are also in bankruptcy (the Penn Central, Central of New Jersey, Lehigh Valley, Reading and Erie Lackawanna). Furthermore, several others are in poor states of health with only marginal profits and

some recent losses. Thus, despite the concentration of this report on the services and lines of the B&M, it is clear that the B&M must not be considered in isolation.

Many of the railroads which connect with the B&M will almost certainly play an important role in continuing the rail freight services of the B&M. Of these the Penn Central is in bankruptcy and the others must be considered to be of marginal health. Furthermore at least two, the D&H and the MeC, are heavily dependent on their interchange of freight with the B&M. It has not been possible to analyze the strengths and weaknesses of these roads in any detail. Nevertheless, since the Study Group has concluded that the B&M cannot be reorganized as a separate corporate entity, it is clear that the strengths and weaknesses of the connecting railroads will materially influence the degree to which various solution measures can succeed.

The Study Group has not yet been able to resolve the important issue of whether the B&M and PC east-west freight movements in Massachusetts can or should be consolidated on one line, either the B&A (Penn Central) route or the B&M's Hoosac Tunnel route. Analysis of the many aspects of this question is still continuing and the Study Group hopes to be able to report on it soon.

There is a basic dissimilarity between the rail system of New England and that of much of the rest of the northeastern United States. While the rail system of New England is diffuse and includes many medium and low density traffic lines, it contains very little parallel or duplicative trackage. Consequently, as the Study Group's analysis has shown, widespread elimination of lines or abandonments of service are not productive: the resultant cost savings are equalled or exceeded by the losses in revenue.

Analysis of the B&M's economic viability and impact on the economy has been crucial in reaching conclusions as to the possibilities for preserving its essential freight services and producing the restructuring which is needed

to attain economic viability. The Study Group believes strongly that such analysis should be carried out for all of the northeastern railroads in order to provide a sound basis for decision-making by government and private sector management.

The following material discusses alternative mechanisms for producing a solution to the problems of the B&M. The Study Group believes that there is a strong prospect that the services currently provided by the B&M can be continued and profitability restored. Furthermore, it appears that the health of at least several of the connecting railroads can simultaneously be strengthened. Through these measures there appears to be a real possibility of restoring to health a significant part of the rail system of the northeastern United States. Consequently care must be exercised that, in dealing with the other railroads in the northeast, these possibilities are not jeopardized.

C. Implementation Measures

1. Private Purchase

Given its present high rate of losses, it is clear that no possibility exists that the B&M will be purchased for continued operation in its present form. On the other hand, segmentation provides a mechanism by which other railroads can take over current B&M freight services while avoiding many of the costs currently incurred by the B&M.

The analysis has identified a potential incremental net income (before any needed debt service) under segmentation of approximately \$10 million per year, aggregated over those railroads which would operate the segments. If as is currently the case of healthy railroads it is assumed that prospective lenders would require (1) that projected net income be at least three times annual interest, (2) an annual interest rate of 8% and (3) a fully funded 30-year sinking fund at 6%, then the maximum debt which could be supported by this income would

be approximately \$42 million. The annual debt service on such a debt would be approximately \$4 million per year, leaving a \$6 million annual return to the railroads.

Unfortunately, it is extremely unlikely that the connecting railroads will be able to raise such funding on the conventional finance market given their own less than robust health and somewhat uncertain futures and given the uncertainties that exist as to the success of segmentation. Consequently, it appears to the Study Group that while it deserves further investigation and discussion with the interested parties, an entirely privately-financed cash purchase of a segmented B&M is very unlikely.

2. Purchase Through Debt Transfer

A possible alternative to cash purchase of segments by the connecting railroads is purchase through an exchange of debt. Under this arrangement, the creditors of the B&M would exchange their current holdings in the B&M for new holdings in one or more of the acquiring connecting carriers. Existing creditors of the connecting railroads might insist that the new debt structure be secured only by the segments so acquired. This would depend greatly on the terms of the new debt and the size and degree of its claim on the incremental revenues of the segments.

Under either purchase possibility it is clear that the existing creditors will have to accept a write-down of the size of their claim. The write-down would be sizable under a cash purchase since existing debt and creditors' claims total nearly \$130 million. However the return would be fairly immediate. Under a debt transfer the return to the creditors would be drawn out over the length of the new debt (probably 30 years) but it appears likely they could negotiate a larger indebtedness, thus receiving a greater return and suffering less write-down.

3. Creation of a Leasing Company

Another private sector device which could be used to bring about segmentation would be liquidation of the present B&M Corporation down to a small corporate shell which retained ownership of the railroad rights-of-way, track, and other essential facilities but leased them all to connecting carriers. This "B&M Leasing Company" would carry on no railroad operations. The current creditors of the B&M would retain their holdings, but in the leasing company. The debt would be retired by the income from rental of the segments.

The differences between this and purchase by debt transfer discussed above may or may not be significant. First, income to the creditors will come from leases with the connecting railroads; return to the creditors may be somewhat higher but less secure than a debt directly in the acquiring railroads. This will depend greatly on the duration of the leases. However, a long-term lease will be only as good as the connecting railroad itself. Furthermore, presumably the longer the term of the lease, the smaller the annual rental payments. Second, by not totally liquidating the B&M Corporation, some of its obligations may remain or be larger than otherwise. Payment of these would diminish net income, reducing the return to the creditors. Whether this will be the case or not will depend on the bankruptcy court.

4. Government Assistance to Private Purchase

Government assistance to private purchase could take the form of government loan guarantees for the bonds the connecting carriers would sell to raise the purchase capital. This would remove the reluctance of the private sector to buy such new issue railroad bonds and would make possible a private purchase by the connecting carriers provided the bankruptcy court would order the sale at the price offered. Government guarantees might also lower the needed interest rate on the bonds, and would thus render feasible a somewhat larger bonded indebtedness (under the assumption of approximately \$10 million

incremental net income before debt service), thus paying the B&M creditors a greater share of their current debt. However, the Study Group believes it is an important topic for discussion as to whether such government loan guarantees should be used to underwrite a sale for a larger price than would be probable without government involvement.

5. Government Purchase and Subsequent Lease

A direct form of government assistance to preserving the freight services of the B&M would be for an agency of government to purchase the rights-of-way, track and essential facilities of the B&M and to lease them for operation to one or more railroads. Such an arrangement would serve to implement segmentation if segments were leased to the connecting railroads. Alternatively, the lease might be with a new railroad operating company or with the corporation formed out of merger of some of the B&M's connecting railroads. Because it appears to be more economical than a single operating entity and capable of faster achievement than merger, it seems likely that segmentation would be the likely result of such a government purchase and lease.

The government bonds for such purchase and lease might be readily saleable. Furthermore, their interest rates might be somewhat lower thus lowering the annual debt service cost and freeing more of the net incremental income for re-investment in improvements to the railroad facilities. Such devices are not new and are exemplified by the numerous state and municipal transportation authorities which own and construct large facilities but lease them for private operation. In the railroad field, the State of Vermont several years ago purchased the former Rutland Railroad and now leases a major portion of it to the Vermont Railway and the Green Mountain Railroad. In this case the rental income nearly pays for the debt service.

If a new or existing governmental transportation agency were to purchase the B&M system and lease it out under segmentation, this mechanism,

as noted above, might effect the purchase at a somewhat lower annual cost than a private enterprise purchase. This is primarily due to the tax exempt nature of various governmental bonds and because these debts are backed by the taxing power of the state or federal government.¹

However, care must be exercised in choosing what type of agency should undertake this venture. A number of suggestions have been made that the Massachusetts Port Authority, for example, might have a significant role to play in the resolution of the B&M bankruptcy and this study was undertaken partially in response to these suggestions.

The terms of this Authority's bonding powers, though, are a limiting factor in any role that Massport might play. For example, the purchase and/or operation of railroad freight lines would be construed as an additional facility of the Port Authority. Therefore, in issuing these bonds, the average estimated annual net operating revenues of Massport, over the five-year period commencing with the date of completion of any project constructed, would have to be at least 150 percent of the maximum principal and interest requirements in any year thereafter on account of all Authority bonds then outstanding. In addition, prior to issuing any bonds the average annual net operating revenues of the Authority over the previous two years would have to be at least 125 percent of the maximum principal and interest requirements in any year thereafter on account of all Authority bonds then outstanding. These strict bonding tests are required to provide adequate security for the bondholders and because the Authority must rely solely on revenues from operations to meet its liabilities; the credit of the State (taxing power) is not available to underwrite the Authority's liabilities.

¹ In the past, public entities have been able to sell their bonds at interest rates approximately 2-3% below those of comparable private industry. Thus, for each million dollars of capital raised, the public agencies pay some \$20,000-\$30,000 less per year in interest charges.

On the other hand, such public bodies do not have the option, which is open to their private counterparts, of raising at least part of their capital requirements through the issuance of stock. Such so-called equity financing by private corporations has significant advantages in terms of lower risk which may more than offset the lower interest charges paid by public bodies.

Because of the high costs involved in the operation of the B&M freight system, the bonding tests outlined above could not be met if this Authority purchased and operated the freight system. Alternatively, the Authority theoretically might purchase the freight lines and lease them to connecting railroads. The feasibility of such a purchase/lease arrangement, however, would depend upon purchase price, forecast revenues, terms of lease to connecting railroads, satisfaction of bonding tests, acceptability to the other states served by the B&M and a number of other factors which cannot be projected at this time. Additionally, consideration would have to be given to the impact any action would have on other plans of the Authority as well as any possible changes in the Authority's statutory and operating independence. In either case, enabling legislation would have to be obtained from the Commonwealth and adequate protection would have to be provided for the Authority's bondholders.

Given these various constraints, it is difficult to be optimistic about a Massport purchase of the freight system with or without subsequent leasing arrangements to private railroads.

6. The Quasi-Public Corporation

Acquisition of the B&M (along with other bankrupt rail companies in the Northeast) by a quasi-public corporation established by Congress is another form of government participation in addressing decisively the difficulties of the B&M and in a way that may be characterized as essentially a private sector answer. The for-profit corporation would be a Class I operating railroad which would purchase the B&M (and others) using shares of its stock having a unit book value prescribed by its enabling law and in an aggregate amount equal to the value of the railroad properties to be acquired. This value would be established by negotiation between the corporation and the railroad and approved by the bankruptcy court or by some other legal process. In effect, the present creditors of the B&M would become the owners of the new corporation by exchanging their present holdings in a bankrupt concern for stock in a profitable company.

The success of this new enterprise would turn on a restructuring of the B&M system as part of the total northeastern United States system so as to produce a profitable and therefore financially attractive regional rail operation. Restructuring would include rationalization or reduction of total rail plant, a reduction in the number of employees required to operate the trimmed down system efficiently and Federal government financial participation in the settlement of claims of employees adversely affected by the effort.

It would also appear to be necessary at least during the early days of the new entity's life to provide some form of Federal assistance including loans or other guarantees to enable the raising of operating and capital funds in the private sector. Variations of the above are reflected in several legislative proposals presently being considered by Congress.

7. Other Forms of Government Assistance and Involvement

a. The Massachusetts Bay Transportation Authority. Over the past several years, the MBTA has provided subsidies (most recently at the rate of \$5.6 million per year) for the operation of commuter passenger service on B&M lines north and west of Boston. While these subsidies are applicable only to passenger service, and are formulated to cover only costs that could be avoided if there were no passenger service, the higher level of maintenance required for passenger operations has inevitably been of indirect benefit to some of the freight service. Although passenger service has been a major burden to most railroads in recent years prior to the advent of Amtrak, the B&M is involved with Amtrak in only one minor area. All of the remaining B&M passenger service is subsidized by the MBTA, and the revenue from this service, plus the subsidy, has been an important source of cash to the B&M for meeting current expenses.

The MBTA has also begun to acquire various B&M commuter lines in the inner I-495 area. The first acquisition--involving purchase of the Reading line for some \$18 million--has recently been consummated, and discussions are

underway for the possible purchase of additional lines. While the MBTA purchases are considered essential in order to assure the preservation and upgrading of commuter service, these purchases will probably have little, if any, impact on the viability of B&M freight service since a major portion of any amounts paid by the MBTA will probably be assigned to the B&M creditors rather than to the B&M as an operating entity. Such payments to the creditors will reduce the debt but, in the view of the Study Group, not to the extent forecast by the Trustees--(\$55 to \$70 million)--and not sufficiently to avoid a substantial write-down of the debt and obligations of the B&M if restructuring is to succeed.

b. The Massachusetts Department of Public Works. The Study Group has examined B&M rights-of-way and properties within Massachusetts for potential conversion to alternate transport-related uses. The analysis to date, reported separately, has found one line with such potential. There may be others in Massachusetts and there likely are some in other states. Nevertheless the extent of these will clearly be very limited and the income to the B&M from the sale or lease of these rights-of-way and properties, while it will be helpful, will have an insignificant effect on the renewal of the railroad.

c. Government Support of Labor Termination Costs. Under current labor agreements the reduction in personnel which must accompany segmentation or merger would ordinarily present large labor termination costs to the B&M. Which personnel will be terminated depends greatly on the form and details of the restructuring. However, the size of the labor termination cost claim will be subject to determination by the courts and may very well be quite a bit less than under ordinary profitable circumstances (see footnote p. 51). Nevertheless a legitimate role of government may be to ease the burden of job loss to those who are so displaced. Legislation to achieve this is being considered by Congress within its deliberations on the northeast rail problem. It seems extremely unlikely that state governments could provide funds for this. Rather the Study Group views this as an item for federal action.

d. Government Aid for Modernization. The ability of the successor to the B&M to raise capital to finance badly needed modernization could be extremely limited especially in the early years. Yet substantial improvements such as a new locomotive fleet and replacement of the Somerville Yards by a modern new yard located on less expensive real estate are badly needed if the railroad is to attain a reliable and efficient status. The new yard alone could cost \$40 million. Government aid in the form of loan guarantees or interest subsidy could be critical to achieving these modernization projects. This too is currently being considered by Congress. As above this is viewed by the Study Group to be an item for federal action as state involvement seems very unlikely.

e. Tax Relief. The B&M currently incurs nearly \$2.2 million per year in property taxes. Over \$1.7 million of this is in Massachusetts despite the fact that operating rights of way are exempt in Massachusetts. Removal of these amounts would constitute a significant boost to the economic viability of the railroads' successor.

D. Where do We Go From Here?

The problems of the Boston and Maine Railroad are not unique and are in fact shared in varying degrees by the other five bankrupt Class I rail carriers operating in the Northeast. Indeed, the healthy railroads of the region are not immune from these serious ills. Notwithstanding the conclusions reached by the B&M Study Group as reflected in this preliminary report, the long-term rail freight transportation needs of New England can be met only to the extent that the overall problems of the nation's entire railroad system are defined, addressed and resolved.

New England's rail system is a vital part of an interdependent network and relies heavily upon the balance of the nation's rail system. The several current Federal Executive and Legislative initiatives certainly recognize this phenomenon.

Although concern over the precise institutional and financial mechanisms for resolving the present crisis-laden dilemma of the B&M and the Northeast is entirely appropriate, it should not be so all-consuming of the efforts and energies of the Executive and Legislative branches of the Federal government and others that sight be lost of other critical dimensions of the problem.

Of particular importance is the need for establishing a process to assure thorough and systematic analyses of the specific bankrupt and nonbankrupt rail carriers and of the economic impacts of the rail industry upon the regions it serves.

The vast majority of United States rail carriers are not bankrupt. Nevertheless, they have genuine needs which must be recognized and met particularly in terms of making capital more easily available for required investments in plant and equipment. In 1972, this nation's total transportation bill was some \$200 billion, of which about 80 percent involved highway transportation, either directly or indirectly. Allocation of transportation resources is clearly out of balance.

Railroads have been delayed or even prevented from adjusting their operations to meet changing economic conditions including competition from other modes. 100 percent of rail ton-miles are regulated, compared to only 40 percent of trucking and less than 10 percent of domestic water carriers. The "Law of Comparative Advantage" simply has not been permitted to work. Regulatory practices and procedures must be modernized industry-wide. In large measure, the economic theory behind most present rail regulation is rooted in the late 19th century, when rail had little or no outside competition.

It is also evident that without definitive action on the so-called railroad "labor problem," little more than symptomatic relief is offered by many of the current proposals. Labor has legitimate claims to make of and be recognized by the rail industry and government. But if in fact the overall solution to the rail

problem requires the best efforts of all who are genuinely concerned over the restoration of the Northeastern railroads to health and strength, the labor facet of the problem must be examined and dealt with forthrightly. Acceptance of such a necessity makes winners of all the participants; ignored, all are losers.

APPENDIX A
B&M SYSTEM OVERVIEW

ECONOMIC CONDITION

(Millions)

	<u>1970</u>	<u>1971</u>	<u>1972</u>
REVENUES			
FREIGHT	\$61.2	\$67.0	\$66.5
PASSENGER	5.4	5.7	5.8
MBTA SUBSIDY	4.1	3.9	5.0
OTHER INCOME	0.8	1.0	1.2
	<u>\$71.5</u>	<u>\$77.6</u>	<u>\$78.5</u>
EXPENSES			
RAILWAY OPERATING EXPENSES			
FREIGHT	\$54.6	\$55.8	\$58.9
PASSENGER	8.3	9.1	10.4
SUBTOTAL	<u>\$62.9</u>	<u>\$64.9</u>	<u>\$69.3</u>
TAX ACCRUALS	5.9	5.8	6.4
NET RENTS PAYABLE	8.4	7.6	7.1
MISCELLANEOUS	0.7	1.0	1.0
TOTAL	<u>\$77.9</u>	<u>\$79.3</u>	<u>\$83.8</u>
INCOME AVAILABLE FOR FIXED CHARGES	(6.4)	(1.7)	(5.3)
FIXED CHARGES AND INTEREST	\$ 4.4	\$ 3.9	\$ 4.1
EXTRAORDINARY ITEMS	3.5	0.8	2.3
SUBTOTAL	<u>\$ 7.9</u>	<u>\$ 4.7</u>	<u>\$ 6.4</u>
NET INCOME	(14.3)	(6.4)	(11.7)
CASH BALANCE --END OF PERIOD			
CASH	\$ 1.5	\$ 1.6	\$ 0.6
TEMPORARY CASH INVESTMENTS	3.0	4.0	5.6
SPECIAL DEPOSITS	0.1	0.1	0.1
TOTAL CASH AND RELATED	<u>\$ 4.6</u>	<u>\$ 5.7</u>	<u>\$ 6.3</u>

B&M SYSTEM OVERVIEW (CONTINUED)

• DEBT STRUCTURE

DEBT IN DEFAULT		
BONDS	\$69.4	
INTEREST	20.9	
PAYABLE TO AFFILIATED CO.'S	<u>0.8</u>	
SUBTOTAL		\$91.1
 LONG -TERM DEBT NOT IN DEFAULT		 0.2
 OTHER LIABILITIES		 30.1
 ACCRUED DEPRECIATION--LEASED PROPERTY		 <u>2.4</u> \$123.8

T20 B

T2 Boston & Maine Study Group.

Bo The New England economy and

Th the B&M railroad system.

E

